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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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THE DEMAND FOR COAL.

The report of the United States geological survey gives the production of coal in the United States for the calendar year 1899 as, anthracite, 60,514,201 tons; bituminous 172,608,917 tons; total, 233,123,118 tons. The total production of the United Kingdom for 1899 was 220,085,303 tons, or 13,037,815 tons less than the United States.

All Europe is more or less agitated by the coal situation. It is felt that a shortage in the supply of those countries from which it has been customary to purchase is among the alarming possibilities of the near future. How best to avoid the results is one of the important questions of the day in the old world.

The exports of coal from the United States for the calendar year 1899 were 1,707,796 tons of anthracite and 4,044,354 tons of bituminous. Taking the two together the exports were 2.46 per cent. of the production. Taking the fiscal year ending with June 30, 1900, the exports of anthracite were 1,775,168 tons; of bituminous, 5,413,438 tons, or a total 7,188,621 tons. This was an increase for the two varieties of 2,136,688 tons, or more than 42 per cent. over the exports of the fiscal year 1899, when the number of tons of anthracite shipped abroad was 1,571,581 tons, and of bituminous 3,480,352, or a total of 5,051,933 tons.

The exports of coal from Great Britain in the calendar year 1891 aggregated 41,180,300 tons, or 18.71 per cent. of the total production. It is the consumption of coal, however, rather than the export of it that indicates the manufacturing activity of a country, and in this particular the advantage rests with the United States. Practically all the coal produced that is not exported is consumed at home. This would make the British consumption of coal for 1899 178,905,000 tons, and that of the United States 227,370,960 tons, or 48,465,960 tons more than Great Britain.

THE DEUTSCHLAND.

The twin-screw steamship Deutschland of the Hamburg-American Line made on her maiden trip an average of 22.42 knots per hour for 3,044 knots from Plymouth to Sandy Hook, arriving in New York July 12. Her daily runs were 308, 557, 553, 551, 532, and 543 knots, making the trip in 5 days, 16 hours and 15 minutes, which beats the best previous record of western trips. On the return trip another new record was made to Plymouth in 5 days, 14 hours and 6 minutes, the average speed being 23 knots.

In appearance the Deutschland resembles the Kaiser Wilhelm der Grosse, but is longer by 38 ft., and has 7,000

more indicated horse-power. The Deutschland is 686½ ft. long, her breadth being 67½ ft. and depth 44 ft., and displacement 16,000 tons. The engines are in two sets, quadruple expansion, with six cylinders each. The indicated horse-power is 35,000. There are 12 double and 4 single boilers, having 112 furnaces. Her propellers are 23 ft. in diameter. She has six decks, 17 watertight compartments, and a double bottom divided into 24 chambers. She has accommodations for 467 first class, 300 second class and 300 steerage passengers. A large play room for children, and gymnasium on the promenade deck, are available to first class passengers, and a grill room upon the boat deck, open until midnight. The promenade deck is 520 ft. long. The ship has bilge keels and her appointments throughout leave nothing to be desired for comfort and convenience.

TORPEDO BOAT PRACTICE AT NEWPORT.

An interesting sham naval battle occurred Sept. 25, at Newport, R. I. The battleships Kearsarge, Indiana and Texas, together with the converted yachts Scorpion and Eagle, formed a blockading squadron off the harbor. A Torpedo flotilla, consisting of the Porter, Rodgers, Gwyn, Morris, Dahlgren and the submarine boat Holland were sent out to attack the blockading squadron in the darkness and permit the tug Leyden to get to sea. The night was very dark and no lights were displayed by either side. The Leyden and Rodgers were destroyed by the Kearsarge, the Scorpion and Eagle were torpedoed by the Gwyn, the Indiana was torpedoed by the Dahlgren, the Kearsarge was picked up easily by the Holland and destroyed before any defence could be made. The Texas was the only one of the blockading squadron that escaped. The feature of the practice was the success with which the submarine boat approached and destroyed the expectant and most important battleship several miles out at sea.

MOTOR BOATS ON THE DEAD SEA.

The Dead Sea, which for thousand of years has been a forsaken solitude in the midst of a desert, on whose waves no rudder has been seen for centuries, is to have a line of motor boats in the future. Owing to the continued increase in traffic and the influx of tourists, a shorter route is to be found between Jerusalem and Kerak, the ancient capital of the Land of Moab.

The first little steamer, built at one of the Hamburg docks, is about 100 feet long, and began the voyage to Palestine on June 16. An order has already been given for the building of a second steamer. The one already built and on the way is named Prodomos (that is, "forerunner"). It will carry thirty-four persons, together with freights of all kinds. The promoters of this new enterprise are the inmates of a Greek cloister in Jerusalem. The management of the line is entirely in German hands.

The trade at Kerak with the desert is to-day of considerable importance. It is the main town of any commercial standing east of the Jordan and the Dead Sea. Its population consists of about 1,800 Christians and 6,000 Moslems. The merchants of Hebron are among the chief frequenters of the markets of Kerak.

Annaberg, July 10, 1900. JNO. F. WINTER, Consul.

THE new St. Louis Steel Barge Co. launched its first steel hull, light draft, towing steamer Sept. 15. President Potter says the company will be ready to ship grain to New Orleans in October at a profit for 3 cents a bushel.

HYDROGRAPHIC OFFICE NOTES.

Lake Michigan—Waukegan harbor—Sunken rock off city dock.—Information dated September 13, 1900, has been received from H. A. Kennedy, harbor master at Waukegan, that a small rock with 16½ feet of water over it lies on the north side of the entrance channel into Waukegan harbor, about 30 feet out of the channel and directly in front of the warehouse on the city dock.

Lake Erie—Sunken wreck northwestward of Cleveland.—Information has been received that the wreck of the schooner Dundee, sunk during the gale of September 12, 1900, lies in a position from which Cleveland west breakwater light station bears approximately S. 56° E. true (S.E. ¾ E. mag.), distant 14 ⅞ (17) miles.

The wreck lies on an even keel, heading W. N.W. in about 70 feet of water, with her crosstrees just out of water.

The wreck is not lighted, but a flag has been made fast to one of her topmasts. She is in the hands of the underwriters and will probably be raised.

St. Clair River—Reported shoal water south of Woodtick Island.—Capt. G. P. McKay, of the Lake Carriers' Association, reports that there exists in St. Clair river, about a mile below (south) of Woodtick Island, on the American (west) side, opposite William Cottrell's house, a shoal spot well known to vesselmen. It is indicated by the change in a vessel's speed when near and may not have less than 20 feet of water over it. (N. M. 38, 1900.)

Lake Erie—Pelee Passage—Wreck southward of the Dummy light-house.—Information has been received from Capt. Dunn, commanding the Dominion cruiser Petrel, that the wreck of the Specular, sunk by collision in Pelee Passage, lies in 5¼ fathoms of water on the following approximate bearings:

Dummy light crib N. 20° E. true (N. by E. ¾ E. mag.), distant 3¼ (3¾) miles.

Pelee Island light-house N. 82° 30' W. true (W. ¾ N. mag.).

Also, that a double white light is maintained by the owners in the starboard main rigging of the wreck, which lies with her head about W.N.W.

FROM CHICAGO TO THE GULF.

The advisability of creating a 22 foot channel in the lower Mississippi and thus creating a waterway whose passage would be sufficiently large for ocean steamers and the corresponding relation Chicago would bear to such a plan, were the principal questions discussed recently before the drainage board. The scheme, which is fathered by Engineer Seddon is based upon the reservoir plan, by the construction of which, added to numerous dikes, it is said that the Mississippi floods can be minimized and in the flood time sufficient water can be stored in these reservoirs to provide an unfailing flow of the water in the summer time, when the river as a rule becomes low.

The estimated cost of the improvement is as follows: Flood protection expended, \$50,000,000; completion of same \$20,000,000; cost of annual maintenance, \$2,000,000; annual amount to be spent in dredging, \$250,000; reservoir system \$32,000,000.

The plan has been examined by a number of eminent engineers. The drainage trustees are deeply interested in the plan, as they realize that the deep waterway between the Great Lakes and the Gulf of Mexico will in all probability never be undertaken by the federal government until some practical method has been devised to establish a deep channel in the lower Mississippi and so control the flow during floods.



BUFFALO.

Special Correspondence to the Marine Record.

Owing to the strike of the coal miners shipping of hard coal by lake from Buffalo has about stopped.

Buffalo has been receiving about 1,000,000 bushels of grain a day, and considerably more than the average amount of flour by lake. Iron ore is coming in to the amount of about 10,000 tons a day, which is much more than the average of former seasons.

It is stated that W. J. Conners has begun the work of building the elevators in Montreal which will turn some of the grain trade of the lakes to the St. Lawrence route. The building operations will continue through the winter, and in all \$4,000,000 will be spent.

Coal freights are at 30 cents Lakes Michigan or Superior. There is little or no chartering, however, this week, on account of the miners' strike, and a single cargo a day has been about the average. There is a brisk trade being done in soft coal, with a greatly increased output from the mines.

Three members of the crew of the steamer North West were arrested here on the charge of being implicated in the robberies which took place on the North Land when she came down on her last trip and also of having been concerned in stealings on board of the North West. Their alleged intention was to ship the goods to Cleveland, where they intended to open a restaurant.

"No one seems to care what becomes of the lake sailors," said a lake captain recently. "The rottenest vessels are allowed to run with the staunchest, without regard to what cargo or depth. As a result the old-timers are brought out loaded deep, and run up and down until a gust of wind strikes them and sends them to the bottom. The past season was free from gales, so the loss of life was small, but the present summer has been one of uncertain winds and the fall promises to be stormy.

The United States branch hydrographic office in this city is now under the charge of Lieutenant-Commander J. H. Bull, United States Navy. Commander Bull entered the service in 1866, being appointed from Pennsylvania. During the Spanish-American war he was attached to the U. S. S. Newport, and served on the blockade of the coast of Cuba. He has just returned from the Asiatic station where he had varied service during the Philippine insurrection, having gone to Manila immediately after the blockade of Havana.

Capt. George McLeod of Buffalo has inspected the wreck of the schooner Sage which was sunk in collision with the steamer Chicago on Monday night at Harsen's Island and reports her a probable total loss. The Sage was owned jointly by John Kelderhouse, the Maytham estate, and her master Captain John Laughlin, and was valued at \$15,000. Capt. Laughlin's interest was insured for \$3,600 with Smith, Davis & Co. Kelderhouse and the Maythams had no insurance. The Sage's cargo consisted of 1,500 tons of soft coal.

When the Sturges elevator at Buffalo was burned in 1896 it was not rebuilt and the high price of steel has prevented operations until now. The 800,000-bushel addition to the steel electric elevator will be finished soon. This week the reconstruction of the burned Eastern, a 2,500,000-bushel steel tank structure, was begun, and it is also announced that the owners of the burned Dakota will rebuild with steel at once, the capacity to be the same as the Eastern. The two will stand back just above the foot of Main street, on the island between the Blackwell canal and Buffalo creek. When they are finished the loss by the summer's fires will be made up. This will give the harbor a capacity of 24,495,000 bushels, of which 9,300,000 bushels, or considerable more than a third, will be of steel.

COLLINGWOOD, ONT.

Special Correspondence to The Marine Record.

The Algoma Central Steamship Line's S. S. Paliki, was on the dry dock for a new wheel, this week. This is one of the fleet which the Clergue Co. brought from England.

The Canadian barge St. Andrew, owned and operated by Mr. Jas. Playfair, of Midland, and Capt. Featherstonehaugh, of Penetang, who commanded her, was lost near Jack Fish Bay, on Lake Superior, on Tuesday of last week. The steamer was light, bound for Port Arthur for a cargo of grain. She was beached and slipped off into the water. The crew lost everything, barely escaping with their lives. The St. Andrew was formerly the steam barge W. B. Hall, and since being rebuilt has been in the grain trade between Port Arthur and lower lake ports. She was valued at \$50,000, and insured for \$18,000.

DETROIT.

Special Correspondence to the Marine Record.

The cargo of pig iron taken from the wrecked schooner Richards has been released by the Canadian government and shipped to Buffalo in the schooner Monguagon.

The life-saving station at Grand Marais, Mich., was manned on the 15th inst. with Capt. Benjamin Truedell as keeper. J. G. Kiah, Esq., is superintendent of the district.

The Detroit Ship Building Co. has re-elected the following officers for the ensuing year: Alexander McVittie, president; W. C. McMillan, vice-president; M. E. Farr, secretary and treasurer.

Two more bodies of victims of the schooner Martin disaster were recovered in the St. Clair river Sunday. One was that of Capt. Lawless, and the other is supposed to be that of mate Wm. Ross.

The new steel steamer Capt. Thos. Wilson, Capt. Wood, left the yards of her builders, the Jenks Ship Building Co., Port Huron, on her maiden trip this week. She will load iron ore at Ashland for South Chicago.

The body of John Kelly, one of the sailors who was drowned when the schooner J. S. Richards was crushed by the steamer J. W. Moore several weeks ago, was found in the cabin of the vessel Monday by Capt. Baker. The body is at Detroit.

The marine mail clerks at Detroit, during the month of September, received 12,565 pieces of mail from passing boats and delivered 34,960. The passages numbered 3,004. There were seventy-six money orders issued, their aggregate value being \$1,741.61, and twenty letters were registered.

The small Canadian steamer Dominion burned to the water's edge on Tuesday night while lying at the Sulphur Springs canal below Sandwich. Capt. Ed. Horn says he was preparing the boat for winter quarters and does not know how the fire started. The insurance is very light.

John S. Quinn, the well-known diver, has been awarded the contract by the government for removing the wreck of the old schooner Leader, just above the head of Belle Isle, and close to the navigable channel. He will take his handsome swift yacht Reliable and a few sticks of dynamite and blow the hulk.

Capt. Andrew Hagany, president of the Toledo Branch of the International Lake Seamen's Union, has paid \$30 each to G. Peterson and V. J. Kyle, sailors who lost their baggage when the John Martin sank. When the Orinoco was damaged by fire recently four seamen lost their baggage, each of whom has been paid \$30.

The following report for the period from August 16 to September 15, 1900, inclusive, of vessels passing through Detroit river, was furnished by courtesy of Postmaster F. B. Dickerson, at Detroit, Mich.: Number of vessels passing through during the day, 1,791; during the night, 1,486; total, 3,277; for the season, since April 26, 1900, 15,533.

Boiler shop and shipbuilders' tools, manufactured by Wickes Bros., Saginaw, Mich., and Pittsburg, are illustrated in a catalogue. Heavy duty rolls, light shipbuilders' rolls, medium rolls, light duty rolls, vertical rolls, punch and shearing machines, flanging clamps, hydraulic flanging press and portable pneumatic riveters are described and reproduced from photographs.

Announcement is made by the Lee Injector Manufacturing Co. that a diploma and silver medal were awarded its ball valve automatic injector at the Paris exposition. The injectors have been doing active duty on the battery of boilers furnishing steam power for the American exhibitors, and the award is for merit as well as for simplicity of construction and beauty of appearance.

In removing the sunken schooner Fontana, at Port Huron, M. Sullivan, of this city, who has the contract, will use the dredge Gladiator, the tug Columbia and a steam derrick. The divers will be enabled to work within a cage constructed on and sliding with the big spud anchors of the dredge, which will prevent all danger of being washed away or getting the lines mixed in the swift current. An attempt will be made to pick up some of the iron ore which formed the Fontana's cargo.

U. S. Local Steamboat Inspectors Galwey and Millen on Saturday completed their investigation as to the cause of the Moore-Richards collision, and to fix the blame, if any one was to blame. Their report to Supervising Inspector Westcott is to the effect that the disaster was caused by the wheel chains of the steamer John W. Moore fouling, causing her to suddenly sheer out of her course, and into the schooner John S. Richards. Thus, Capt. Richard Neville, of the Moore, and Capt. May, of the Richards, are cleared of any suspicion of blame that might have rested on either. This ends the matter in so far as the steamboat inspection service is concerned.

Next Monday the Detroit & Cleveland line steamer City of Alpena will be laid up after what has perhaps been the most successful season of her career. Many thousands has she carried back and forth between Detroit, Toledo and the Straits in 1900, it being a common happening to see her main cabin strewn with cots, each supporting the reclining form of a tourist for whom there was no other berth, because of the enormous traffic. Her place the remainder of the season will be taken by the City of Mackinac, leaving Detroit Mondays at 5 p. m., and Fridays at 9:30 standard. This is also the longest season, by twenty days, the Alpena

has ever had, the excessive north-bound freight having been more than the Mackinac could handle alone.

Commander Wilson, U. S. N., in charge of the eleventh light-house district, states that the experimental bell and gas buoy in Lake St. Clair was a success during the time it remained lighted previous to the injury it received from some passing tow a few days ago. "There are but two of these buoys in use," said Mr. Wilson, "one here and one in the New York district. They are still in the experimental stage, but in comparison with the so-called fog buoy, which rings only when there is sea enough to give it motion, I think this automatic buoy is going to prove of infinitely more value on the lakes. Here we have little sea when there is a heavy fog and the fog bell buoy is of comparatively little use. With the new buoy the mechanism gives continual warning, no matter what the state of weather."

Senator McMillan's steam yacht Idler is now the property of Orin G. Staples, the proprietor of the Riggs House and National House in Washington, D. C. The Idler cleared this week for Alexandria Bay, where Mr. Staples is also proprietor of the Thousand Island House. The yacht will become a part of the pleasure fleet in these waters. The Idler was built in 1886, by J. Lorrillard, at Green Point, N. Y., and cost a small fortune. She is schooner rigged and steams 16 miles per hour. She is 126 feet over all, 300 horse power, triple expansion engines, draft of 5 feet 7 inches and is as complete as money can make her. The mahogany deck house and cabin finish is well set off by the rich plush trappings, and for heavy weather she is snug as can be desired, being heated by steam and lighted and ventilated by electricity. Capt. Visger, of the Thousand Islands, accompanied the yacht to her new home, and Capt. James Skiffington, of Detroit, went in charge until she is delivered at the islands and turned over to her new owner.

Col. Lydecker, United States Engineer, opened bids on Tuesday for the removal of the wrecked schooner Fontana. The contract was awarded to M. Sullivan, of this city, whose bid of \$7,000 was the lowest. Mr. Sullivan is the well known contractor, formerly of the firm of Sullivan & Dunbar. Mr. Sullivan expects to have the wreck fully removed inside of ten days. Safe navigation over the wreck of the schooner John Martin is now assured and Col. Lydecker authorized the removal of all mandatory regulations concerning the passage of boats by the wrecks. The patrol tugs have been removed from duty and vessels may pass as they did before the John Martin was sunk. In order that no further accidents may occur, masters are cautioned against meeting or passing other vessels in the immediate vicinity of the Fontana, and it is advised that steamers having more than one consort employ a tug to get through the passage. The three piles marking the safe limit of navigation on the Canadian side east of the Fontana will be painted red and lights displayed from them at night. Masters should have no trouble in making the upbound passage to the east, and if they will use this side, no further difficulty should be encountered.

CLEVELAND.

Special Correspondence to The Marine Record.

The naval reserve practice vessel Hawk, reached here this week all well.

A charter was placed here on a small cargo of ore, Duluth to an Ohio port at 70 cents.

Hon. Sumner I. Kimball, Superintendent-general U. S. Life Saving Service was in Cleveland on Thursday.

An Escanaba charter was made this week at 65 cents for iron ore; coal is at 30 cents from Ohio to Lakes Michigan and Superior large ports, to some minor ports double this figure is being paid for a certain class of tonnage.

The regular monthly meeting of the executive board of the American Ship Building Co. was held here on Wednesday. A quarterly dividend of 1 1/4 per cent. on the preferred stock payable on Oct. 15 was declared, but no other business of importance was transacted.

The case of James Rodney, owner of the dredge Birkhead, against the schooner Athens, was decided in his favor this week by Judge Ricks, a decree in default for the plaintiff being entered for \$207.56. The dredge was damaged by the Athens in Detroit river in 1898.

The Stang estate has sold the dredge Continental, the tug Selah Chamberlain, three mud scows and a fueling scow to the Standard Contracting Co., for a consideration of \$16,600. The deal also includes the transfer of a five years' dredging contract with the city of Cleveland.

All the bodies from the ill-fated yacht Idler have now been found. The body of Miss Jane Corrigan was picked up on Friday last. The fisherman who found the body will be rewarded. It is estimated that Capt. Corrigan has spent a small fortune in his search for his loved ones.

There has been considerable delay this week in moving coal to Lake Michigan, on account of the shortage of coal. Owners of lumber carriers say they are certain of \$2.25 from the head of Lake Superior, on account of the number of vessels that have laid up, and the approaching fall weather.

Coal cargoes are scarce and a few vessels that were on the market Wednesday could not be placed. The shortage of cars has put some shippers in such shape that they have about all they can do to take care of their contract vessels. There is no change in the ore freight situation and the wild business from present indications will cut very little figure from now on to the close of navigation.

The week started with a heavier movement of coal than has been seen on the market for several weeks. Toward the latter part of last week the receipts of coal from the mines was very light, and in some instances the shippers did not have enough to take care of their chartered tonnage. This was due to the scarcity of cars on the railroads and also to the fact that the mines were not producing coal as fast as the shippers wanted it.

The ore receipts at Ashtabula for September were 471,063 tons, making the total for the season to Oct. 1, 3,029,681 as against 2,462,241 to Oct. 1, 1899. The same percentage of increase through October and November will swell Ashtabula's total receipts to over 4,000,000 tons, a figure never reached by any ore receiving port in the world. The coal shipments were 165,905 tons, a falling off of 115,471 tons as compared with September last year.

The course in naval architecture, which was started so successfully last year by J. R. Oldham in connection with the evening class work of the Young Men's Christian Association, will be given again this year. George K. Newbury, of the American Ship Building Co., has been secured as instructor for the course of twenty Wednesday evening lessons. Mr. Newbury is a graduate of Boston School of Technology, and the class gives promise of a large enrollment.

The steamer William Edenborn, of the American Steamship Co.'s fleet, now shares the honor of record cargo in the ore trade with the steel tow barge John Smeaton, of the Rockefeller fleet. The Edenborn delivered at Conneaut from Two Harbors, a short time ago, 7,446 gross or 8,339 net tons of ore, including the 1 per cent. above bill of lading weight which the ship always carries on account of moisture. This load is exactly equal to one which the Smeaton moved last season from Duluth to Cleveland.

The Ohio Fuel Co. in which Mr. J. B. Zerbe and some of the officials of the American Steel & Wire Co. are interested, and which was organized some time ago, is now ready for business. The new company has a dock on Whiskey Island and a good plant for fueling steamers. Mr. L. H. Ramage, who was formerly with Osborne, Saeger & Co., is agent for the company, and he says he will keep Nick Boylan, the hustling agent for the Pittsburgh Coal Co., guessing for the balance of the season. The trust has little or no opposition at this port this season.

John Craig, of the Craig Ship Building Co., of Toledo, says he is not anxious for an order for another vessel, unless the price is such as to admit of a fair profit. His company will be kept busy during the winter, as a freight steamer of Canadian canal size for the Messrs. Hawgood, of Cleveland, and a passenger steamer for the Booth Packing Co., of Chicago, are contracted to be built. A Sandusky report says negotiations are pending for the sale of the propeller American Eagle, of that port, to the Craig Ship Building Co. in part payment for a steel passenger steamer to be completed at Toledo by June 1, 1901.

The preliminary work to the widening of the channel of the river below the Lake Shore bridge is about completed, and that of making the channel uniform will be started upon soon. Before any dredging could be done it was necessary to construct a new west pier that was about equally distant west from the old west pier as that structure now is from the east pier. This pier has been erected, and the contractors, Hunkin Bros., will soon start to work cleaning out the channel. The old pier will be removed, and from the Lake Shore bridge north the channel will be dredged to a mean depth of twenty-one feet.

Although the matter has not been settled the steamers Tampico and Eureka of the Hawgood fleet will probably start for the coast the latter part of the month. Local owners who returned from the east after looking over the field, report a good demand for tonnage and that vessels can be chartered for the year or for single trips. The work of handling cargoes on the coast is very slow and the vessels lose a great deal of time in port. Some Lake Michigan parties are figuring on taking vessels down this fall. The steamer which was built at the Craig yard at Toledo for eastern parties, will leave for the coast this week. She will be placed in the coast lumber trade. A fleet of the "whale-backs" will also be sent to the coast, the steamer A. D. Thompson and two barges being mentioned as starters.

The steamer Visitor, which is used by the government engineers for the purpose of making soundings and doing survey work, etc., around the Cleveland district, made a trip to the wreck of the schooner Dundee which foundered recently off this port. The engineers noted the conditions and her location and estimated the cost of removing her. The owners have shown dilatory tendencies regarding this wreck and the insurance companies have been quibbling about her. The engineers do not like such menaces to safe navigation to be left long. As a result of the investigation the government authorities will issue notices to the owners that the wreck must either be removed or they will take steps to do that work themselves. A similar course is to be pursued regarding a dredge which sank off Fairport recently.

The Brown Hoisting Co. has issued a circular, under date of October 1, stating that on that day it accepted the assignment and transfer by the Brown Hoisting & Conveying Machine Co., Cleveland, of its entire plant, business, property, accounts, contracts and assets of every description. The officers of the company are: Fayette Brown, president; Alex. Brown, vice president; Harvey H. Brown, treasurer; and F. G. Tallman, general manager. The change is in pursuance of an announcement made a short time since of the reorgan-

ization of the well known Brown Hoisting & Conveying Machine Co., and the formation of the new company with Delaware charter and \$1,000,000 of preferred and \$1,000,000 of common stock. The old company makes announcement of the change under date of October 1, and says that the entire interests of its stockholders have been re-invested in the new corporation, together with a large addition of new capital. The move just consummated was in view of the great increase in the demand for the products of the company and the desirability of adding to the cash capital employed in its business.

CHICAGO.

Special Correspondence to The Marine Record.

Grain freights were firm on Tuesday at 1 $\frac{3}{4}$ cents for corn and 1 $\frac{7}{8}$ cents for wheat to Lake Erie with the demand for vessels not fully supplied.

There is a good-sized kick floating around because it is said that there is a shortage of grain trimmers at Chicago. The men have been making \$10 to \$12 a day.

Attorney Ray G. MacDonald, who for the last three years has been associated with C. E. Kremer, Esq., has recently fitted up offices at 618 New York Life Building. He intends to make a specialty of maritime law matters. His card appears in this issue of the RECORD.

Shipments of wheat from Chicago for the month of September reached the total of 6,365,644 bushels. It is said among vesselmen that for no month in twenty years have these shipments been exceeded. The greater part of the wheat came from Kansas and the southwest.

Capt. Miles Barry has sold the steamer Mabel Bradshaw which has run on the Chicago-Muskegon route, to W. H. Singer of Duluth, the consideration being \$15,000. She will finish the season on Lake Michigan, and next season will probably run on the west shore of Lake Superior.

The management of the Illinois Steel Co. is said to have under consideration the purchase of tugs for handling vessels consigned to its docks at South Chicago with iron ore. The aim is to secure prompt service at all times, and to reduce the cost of operating vessels. All towing at South Chicago is at present being done by the Great Lakes Towing Co.

For some reason, not known here, stock in the tug trust has jumped from 52 to 70 cents within the past three weeks. The buying movement apparently started in Cleveland, the headquarters of the trust, and orders are still out for more of the stock. It is said the trust is easily making 7 per cent on its preferred stock, but no statement of its financial condition is expected until the annual meeting next February.

There is a blacklist of over a score of vessels in the city engineer's office which are wanted for damage claims to bridges in the Chicago river. The boats will be proceeded against on arrival here if arrangements are not made in the meantime by their agents or owners to satisfy the claims. Most of the claims are for small amounts; nevertheless, the city is said to be in earnest in its efforts to collect every cent.

Because of lack of patronage the Dominion government, it is said, will close the Canadian canal at the Soo. This, vessel men think, would be an unwise move, especially if an accident should occur in the American canal. They will therefore endeavor to make more use of the Canadian canal. One of the grievances of the vessel men is that letters and telegrams are forwarded via the American canal. This they think can be easily remedied.

Pneumatic Tools, 1900. The Q. & C. Co. have issued a new 50-page pamphlet on the subject of their pneumatic tools, including hammers, drills, riveters, stone-cutting hammers and flue expanders. The illustrations, which are very good, show the tools assembled and in groups of parts, each part being numbered for reference in ordering. This catalogue is specially commended for the clear and concise descriptions and the good engravings.

The claim for salvage made against the C. F. Bielman in Milwaukee by members of the crew, is a new wrinkle. Three deckhands were ordered to jettison coal when the steamer stranded. They worked 14 hours each and then a gang of laborers were brought to the steamer from Escanaba and were paid 75 cents per hour for doing the same work. The men demanded that Capt. Stewart pay them the same wages for jettison work as that paid to the Escanaba laborers. He refused, hence the claim.

A movement is being started here to have the Illinois Central railway remove the bridge, which it built several years ago near the mouth of the river. It is said that the bridge was built without a permit. It is directly in the way of vessels entering port. Moreover, it comes in the way of the big passenger boats, which do not as a rule go up the river farther than the first city bridge, at Rush street. If the Illinois Central structure is removed it will give plenty of room to all sizes of vessels in the mouth of the river.

It is a large elevator that can stand a visit from a modern boat. The new steamer S. J. Murphy sailed away from the M. R. Reynolds elevator at South Chicago, some 15,000 bushels short of her cargo, because there was no more grain to be had there of the kind required. Her cargo consisted of 189,250 bushels of corn and 68,000 bushels of wheat, making 7,339 tons. The big boat drew 16 feet 3 inches forward and 17 feet 3 inches aft. A full cargo would have exceeded 7,700 tons. What she left over would have been a fair cargo for one of the schooners a few years ago.

KINGSTON ONT.

Special Correspondence to The Marine Record.

The Kingston Locomotive Works have gone into liquidation.

It is reported that the steamers New York and Romona will be sold.

The steamer Toronto made her last trip of the season Sunday. Bohemian, connecting at Prescott, also ceases running on Sunday.

John Mitchell of Kingston, for some years an employe of the Montreal Transportation Co., was drowned at Trenton on the 26th of September.

The tug Bronson arrived from Montreal, with four light barges, and cleared on Sunday down the river with two grain and two coal laden barges.

The works of the Caledonian Portland Cement Co., located at Marlbank, about ten miles from here, were almost completely destroyed by fire on Wednesday, September 26th.

The tug Charlie Ferris, having in tow two coal laden barges from Oswego, run on the shoal opposite the Martello tower in the harbor at an early hour Saturday morning. The Ferris worked herself off the shoal, and proceeded with her tow to Ottawa.

W. B. Anderson, assistant engineer at the works of the Lake Superior Power Co., Sault Ste. Marie, Ont., has been appointed lecturer in mathematics at the Royal military college, Kingston. Mr. Anderson is the son of Lieut.-Col. Anderson, of the marine department, and a graduate of the college.

The schooner Annie Minnis arrived here from Consecon Wednesday morning with ten thousand bushels of barley for the Northwestern elevator. This is the first cargo of the season and Capt. James Savage will undoubtedly receive the new hat which is always given to the first captain arriving with barley. Capt. Savage captured the new hat last year.

A Kingstonian in Cornwall saw the first train that passed over the Ottawa and New York bridge on Saturday. Both the north and south spans and piers are now completed. The train was made up of an engine and several loaded freight cars. It is understood that the government inspection will take place during the present week and the test will be such as to prove to the most skeptical the solidity of the piers.

On the 26th of September examinations for the position of hull inspectors were held here. The Board of Examiners consisted of Capt. M. P. McEllinney, Dominion hull inspector, Ottawa; P. D. Brunnell, hull inspector of Quebec district, and E. A. Adams, chairman of the Board of Steamboat Inspectors, Ottawa. The candidates writing are Paul Reid, M. R. Davis and W. C. Rothwell, Kingston; D. Manson, Port Hope; W. Jamieson, Deseronto, and T. Cramdall, Lindsay.

The lighthouse which was erected last year by the government between Four Mile and Nine Mile points has been destroyed by the action of the waves. The foundation was first undermined by the water and later the whole structure fell. B. Fraser, Ottawa, assistant to Col. Anderson, chief engineer of the marine department, has reported that it would be necessary to build a solid stone pier for a foundation. Work was commenced at once. The lighthouse is nine miles from here.

Capt. J. W. Rattray, of the steamer Niagara, of Clayton, at present in Davis' dry dock for repairs, was presented Friday night with a beautiful silver pitcher, suitably inscribed, by the guests on board the cruising yacht Onward, of Rochester, which lay at Swift's wharf yesterday. On Thursday night the yacht ran on Halliday's shoal, down the river, and the steamer Niagara en route to Kingston, lay to, pulled the yacht off the shoal and towed it to Kingston. Capt. Rattray would accept no monetary remuneration for the work and the guests on board the Onward took another way of showing their appreciation of the kindly act of the captain.

THE jury in the inquest over the remains of Oliver Obery, the sailor killed in the collision between the steamer Chicago bound up and the barge Sage bound down in tow of the steamer Queen of the West, July 29, returned a verdict at Algonac censuring the captain of the Chicago for the accident. A suit for damages will follow.

THE Norwegian steamer Carlo, which loaded a cargo of coal at Charlotte recently, was the first vessel ever cleared at the Charlotte custom house for a European port. Custom House Officers Julius Clarke gave Capt. Gilleflean clearance papers to a port in Norway, with a permit to stop at Montreal and take on 1,500 barrels of wine. From Norway the steamer will proceed to some Mediterranean port and will afterward continue on her way to Japan, where a cargo of tea will be taken aboard for a Chicago firm. The steamer will reach Montreal on the return trip early next spring. There three barges will be chartered and the Carlo will be lightered so that she can pass the Welland canal, towing to Chicago the barges containing the balance of her cargo of tea. The Carlo's last voyage was of similar nature. If, as expected, her next trip shows a decided saving over railroad transportation by way of New York city, the steamer it is anticipated, will be the forerunner of many others that will make similar voyages.

QUARTERLY SHIPBUILDING RETURNS.

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF NAVIGATION.
September 29, 1900.

The Bureau of Navigation reports 308 sail and steam vessels of 88,790 gross tons, built in the United States and officially numbered during the quarter ended September 30, 1900, as follows:

	WOOD.				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.		No.	Gr ss.
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.		
Atlantic and Gulf.....	129	18,880	51	4,095	3	3,360	7	10,192	190	36,527
Pacific.....	10	6,748	16	3,861	.....	.....	2	293	28	10,902
Great Lakes.....	5	108	18	482	1	2,790	8	33,677	32	37,057
Western Rivers.....	16	297	42	4,007	.....	.....	.....	.....	58	4,304
Total.....	160	26,033	127	12,445	4	6,150	17	44,162	308	88,790

The largest steel steam vessels included in these figures are:

Morro Castle, 6,004 gross tons, built at Philadelphia, Pa.; N. Y. & Cuba Mail S. S. Co., owner.

Lafayette, 5,113 gross tons; built at Lorain, O.; American Ship Building Co., owner.

Cornell, 5,082 gross tons; built at Wyandotte, Mich.; Eddy Transit Co., owner.

Princeton, 5,125 gross tons; built at Lorain, O.; American Ship Building Co., owner.

Rensselaer, 5,124 gross tons; built at Cleveland, O.; American Ship Building Co., owner.

During the corresponding quarter ended September 30, 1899, 296 sail and steam vessels of 73,230 gross tons were built in the United States and officially numbered, as follows:

	WOOD.				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.		No.	Gross.
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.		
Atlantic and Gulf.....	137	13,325	44	2,040	2	1,179	16	17,730	199	34,274
Pacific.....	13	3,932	19	1,688	.....	.....	.....	.....	32	5,620
Great Lakes.....	6	58	17	963	.....	.....	7	29,873	30	30,894
Western Rivers.....	5	132	29	2,260	.....	.....	1	50	35	2,442
Total.....	161	17,447	109	6,951	2	1,179	24	47,653	296	73,230

MONTHLY SHIPBUILDING RETURNS.

The Bureau of Navigation reports 102 vessels of 21,282 gross tons were built in the United States and officially numbered during the month of September, 1900, as follows:

	WOOD.				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.		No.	Gross.
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.		
Atlantic and Gulf.....	46	1,567	9	210	3	3,360	4	3,527	62	11,664
Pacific.....	2	1,860	7	1,588	.....	.....	.....	.....	9	3,448
Great Lakes.....	1	23	4	66	.....	.....	1	4,719	6	4,808
Western Rivers.....	11	200	14	1,162	.....	.....	.....	.....	25	1,362
Total.....	60	6,650	34	3,026	3	3,360	5	8,246	102	21,282

The largest steel steam vessels included in these figures, are:

Captain Thomas Wilson, 4,719 gross tons; built at Port Huron, Mich.; Wilson Transit Co., owner.

James S. Whitney, 2,707 gross tons; built at Wilmington, Del.; Harlan & Hollingsworth, owners.

TRIPLE SCREWS.

The writer of the interesting "Naval Notes," in the Globe, has received a long and interesting letter from Rear-Admiral G. W. Melville, the Chief Engineer of the United States navy, giving some few of the many reasons for his faith in the triple screw system. He says that the majority of those who took part in the discussion on his paper last year, those who were best qualified for an expression of an opinion, or whose opinion might be respected, among the members of the Institute of Naval Architects, were very much in his favor. Even Sir William White, that great authority on shipbuilding and marine propulsion, with Sir John Durston at his back, did not altogether disagree with him. There have only been two triple screw ships built for the American

navy. The sailor man does not take kindly to them, and the strongest argument that Admiral Melville has heard made by one of the best captains, was that he felt badly enough with his ship in hand with two screws, without having three screws in his head to take care of—which argument, to the Admiral's mind, is absolutely no objection at all, as it would only be necessary to have the center screw continue to go ahead and manœuvre his ship with the two

wing screws, or on the other hand, stop his center screw and manœuvre with his twin screws, either in action or out of action. When we take into consideration the modern high-powered battleship of to-day, a mass of mechanism, of steam, pneumatic, electric, and other apparatus from bow to stern, the smallest item of all is the manœuvring or handling of the ship by means of one, two, or three screws. The admiral goes on to say it has occurred to him that, to meet some of the objections raised by many people as to the non-duplication of parts consequent upon using a different sized engine for the central screw in the proposed system of triple screws, there could be four identical engines, two of these for the wing screws, and two for the central screw. That is, half the whole power on the central screw, the other half on the two wing screws, one-quarter on a single wing screw.

Although this arrangement would necessitate increased space and complication, and the admiral does not favor it so much as the system he proposed before the Institute of Naval Architects, he does not think the arrangement of four iden-

tical engines one that gives the warship all the economical and tactical advantages that spring from the triple screw system.

NEPTUNE'S JOKE BOX.

(From the Marine Journal, New York.)

The Ship's Doctor—Never go in bathing after a full meal. Patient—Why not? The Ship's Doctor—Because you won't find it there.

"Are there many barks on the ocean now?" asked the new reporter. "Only those of the ocean greyhound," replied the marine reporter.

First Yachtsman—"That must have been a tremendous wave that threw your boat so far up on the beach." Second Y—"Yes, it was a record breaker."

The new reporter had been assigned to a "feature story" on the incidents of seafaring life, and discovered this interesting note: "Capt. Yardarm, of the steamer Blue Blazes, found himself in a peculiar predicament off the coast of Florida last Saturday morning. Friday night the ship encountered a violent gale, which blew away the wake of the vessel, and it required the hardest efforts of the night watch to arouse the sleeping crew that morning."

LITERARY NOTES.

Mrs. Schuyler Crowninshield, wife of the Admiral who holds the helm in the Navigation Office at Washington, has contributed to the October New Lippincott a pathetic tale called "For the Senora." Mrs. Crowninshield obtained the "local color" for her West Indian stories by official residence and many cruises with her husband among the Antilles.

The September, 1900, number of the "Century Magazine" has the following special features: "Amusements of the Paris Exposition," by Mr. Jean Schopfer; "A summer holiday in Bering Sea," by Mr. John Burroughs; "The influence of the Western World on China," by D. Z. Sheffield, D. D.; "The revolution in China and its causes," by Mr. R. Van Bergen; "Responsibility of the leaders of labor," by the editor. There are also the usual drawings, stories, etc.

The August issue of the "Journal of the American Society of Naval Engineers" contains a timely and valuable paper by Lieut.-Comdr. W. F. Worthington, U. S. N., on "Corrosion of Boiler Tubes in the United States Navy." The article is illustrated with numerous examples of boiler tube corrosion from which it appears that "all tubes corrode, but some more than others," and it is the intent of this valuable paper to ascertain in some way what the determining factor is in this mysterious destruction of the tubes in our modern naval steam boilers. The boiler is the heart and soul of a ship, and a practicable method of protection against the "devil in the feed water" is the end sought by thousands of engineers in all parts of the civilized world. Lieut. Comdr. Worthington comes to the conclusion that so long as boiler tubes are exposed to the water from which their steam is formed so long will corrosion go on, but several methods of protection against this insidious enemy of efficiency are pointed out, not, however, with much faith in their cure, but in the hope that "in the multitude of counsellors there may be wisdom" and safety.

The situation in the Far East is still a question of paramount importance throughout Christendom, and the October Century throws some very helpful lights and sidelights upon it. Most novel among these is "A Plea for Fair Treatment" by Wu Ting Fang, Chinese Minister to the United States. Few if any representatives of his race have Mr. Wu's wide knowledge of the two worlds now in conflict on Asiatic soil, and still fewer have the ability to express their views in logical and vigorous English. Mr. Wu's terse and suggestive plea for fair treatment and forbearance is strongly reinforced by Bishop Potter, whose "Chinese Traits and Western Blunders" shows that on his visit last winter he took to China an open mind as well as open eyes. No less significant is a paper by Sheridan P. Read, formerly U. S. Consul at Tientsin, on "The Chinese as Business Men," in which the opinion is expressed that the present disturbing elements, both popular and official, would have yielded, even without foreign intervention, to conservative pressure from the Chinese merchant class and its following. Sidelights on the present position of affairs abound in "China's Holy Land," by Ernst von Hesse-Wartegg, a profusely illustrated account of a visit to the tomb of Confucius, and in "Chinese Education" (also illustrated), by Romyne Hitchcock; and of special timeliness in the same connection is an editorial on "International Hatred."

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	4,146,000	357,000	372,000	37,000	166,000
Chicago.....	13,065,000	2,827,000	3,184,000	479,000	20,000
Detroit.....	448,000	44,000	222,000	113,000	10,000
Duluth.....	6,386,000	20,000	30,000	80,000	368,000
Port William, Ont..	892,000	.....	.....	.....	.....
Milwaukee.....	779,000	53,000	247,000	1,000	13,000
Port Arthur, Ont..	76,000	.....	.....	.....	.....
Toledo.....	1,251,000	382,000	1,498,000	23,000	4,000
Toronto.....	25,000	.....	1,000	.....	35,000
On Canals.....	365,000	507,000	73,000	26,000	166,000
On Lakes.....	2,106,000	2,021,000	1,005,000	.....	337,000
On Miss. River.....	.....	.....	.....	.....	.....
Grand Total.....	55,409,000	7,322,000	11,425,000	926,000	1,464,000
Corresponding Date, 1899.....	42,143,000	8,850,000	7,328,000	709,000	1,441,000
Increase.....	416,000	170,000	.....	57,000	680,000
Decrease.....	.....	.....	234,000	.....	.....

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

LOSS OF LIFE ON LAND AND SEA.

According to the official returns just out, one's chance of being drowned by falling overboard or losing one's life through shipwreck in the British merchant marine is as one to 147. Taking into account all the other accidents which occur on board ship the chances are as one to 129. This is for the officers and crews of the merchant navy. The passenger has a much better chance—in fact his risks are almost nothing. Of the hundreds of thousands of passengers carried by British ships in the last year only 116 lost their lives through shipwreck. It would almost seem that it is safer to go to sea than to stay ashore, provided one is a passenger. Great Britain employed over 221,000 men in her merchant marine last year, a smaller number than she has employed before for many years. Of these 1,503 were lost by wreck or drowning, and 205 by other accidents, making a total of 1,708 sailors of British ships, sail and steam, who perished at sea in the course of 1899. Sailing vessels are not as safe to work in as steamers, for one sailor in ninety who shipped in a "lime juice wind jammer," which, being interpreted is a British sailing vessel, last year lost his life by wreck or drowning, and enough were killed aboard such ships in other ways than wreck or drowning to bring the average up to one in 81 sailors who never again will see the dear white cliffs of Dover. In steam vessels the number lost from every cause was only one in every 152 sailors employed.

It is interesting to compare this record of lives lost at sea with the report of the United States interstate commerce commissioners, showing the deaths among railroad employees in this country as the result of accidents. Last year 2,210 railroad employees were killed and 34,923 injured, a total of 37,133. This is nearly two and one-half times as many men as were killed and wounded in the British army in south Africa up to July 1, which is set down in round numbers as 15,000. Taking the record of deaths on American railways among the employees, those people who are technically known to the roads as "trespassers" and passengers, the number killed foots up to 7,123, besides which there were 44,620 people injured—a total of over 51,000. This is far in excess of the number of people killed and wounded in the wars in south Africa and in the Philippines including friend and foe. It would seem that warfare and seafaring were, after all, safe occupations compared with traveling by railroad. The figures also would seem to prove that we are still far away from the perfection of railway travel. In spite of all the ingenious inventions which have been made to make it safer to travel by rail, the loss of life due to railway accidents is still appallingly large.—Washington Post.

FRENCH SHIPBUILDING.

During the last two months an effort has been in progress to induce an American shipbuilder of reputation to establish a branch shipyard here. There seemed to be no reason why a profitable arrangement should not be made. French capitalists are eager to invest in steel ships. The bounty given by the government is in itself very attractive. The prices offered by parties desiring to own ships were much in advance of what is paid in other countries. The parties interested stood ready to guarantee contracts enough at the outset to keep the works fully occupied for ten years at prices quite in excess of those prevailing in American yards. The builder—a man thoroughly versed in his profession and not lacking financial backing—came, looked the matter over and said:

"There is but one thing in the way: can I get the steel required for such an amount of work delivered in such quantities and at such terms as to justify me in contracting to deliver finished work at specified times? I can import the labor if required, but I doubt if I can import steel with a duty of \$16 to \$18 a ton and build ships at a profit. If I can get French steel delivered on time in the quantities required, I am ready to conclude a contract at any moment."

I am not informed as to the result of his investigation of the matter. I do not even know that it is completed. I only know that the contract is not concluded, and that English, or perhaps German builders are being solicited to establish branch yards here to build French ships in France.

As it is a matter of many millions, I was naturally anxious that an American builder might see his way clear to make the venture; but if he can not, I trust another may be induced to come, for I think the immediate future will make no more pressing demand on France than for more ships.

ALBION W. TOURGEE, Consul.

Bordeaux, June 25, 1900.

TUBULOUS BOILERS.

The controversy which has for a long time occupied the minds of English engineers over the relative merits of several types of boilers continues to produce interesting contributions to the technical press. Under the title, "Boilers for Our Navy," the Electrical Review of London published a review of a newspaper discussion growing out of the visit of the recently appointed boiler commissioner to the works of the Babcock & Wilcox Co., at Renfrew, concluding as follows:

The Niclausse and the Babcock boiler have both been named in connection with the navy, in which they have had a limited trial. The Niclausse boiler is a derivation from the Field tube principle, and should prove safe. The Babcock marine boiler differs much from the familiar land type, being much shorter in the tubes, and the lower tubes being much more widely spread than the upper tubes with the idea of assisting combustion, but neither of these boilers appears to be any better in principle as regards smoke than is the Belleville. They are all hopeless in this respect for bituminous coal, and doubtful for any coal that will smoke. Bertin gives the evaporation of the Babcock boiler with forced draft and closed stokehold as only 7 pounds, or as 8.5 pounds from and at 212 degrees F.

The Niclausse boilers of the French ship Friant showed a very low efficiency at first, but were proved to require a very thin fire, and are stated by Bertin to have evaporated nearly 10.5 pounds from and at 212 degrees when burning coal at the rate of 25.3 pounds per square foot of grate per hour. It is perfectly obvious that no matter how bad all water tube boilers may be as regards smoke production, there are others than the Belleville, and at least some of these others are safe, and are constructed with some regard to correct principles internally as far as regards circulation. We think that the seventh member of the committee, if not yet chosen, might well be selected from the ranks of the boiler insurance companies. These societies have had opportunities of watching all the boilers of the last 40 years, from the so-called Howard safety boiler, which was so very disastrous, down to the present day.

A German boiler, also derived from the Field tube, is the Durr boiler, that was fitted to the Ersatz-Freya of 5,600 tons, to be tried against Belleville and Niclausse boilers fitted in sister ships. We have not heard if these tests have yet been made.

The one universal feature of all the water tube boilers is the entire neglect of necessities of combustion which they all exhibit. The predominating desire of the designer's heart appears to be simply to crowd all the heating surface as closely and thickly as possible upon the half-consumed fuel.

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report the condition of the Eastern freight market as follows:

The freight market, as far as steam tonnage is concerned has maintained a fairly firm tone in nearly all directions. Steamers for grain have not met with the firm response anticipated in our last, more particularly for near by months, shippers not being able to consummate new business on rates demanded by owners. Cotton charterers have shown more disposition to take tonnage at prevailing rates, but on more liberal offerings of boats towards the close now seem less inclined to operate, except for very early loading. Little business has been accomplished from the Gulf ports, but rates thence are well maintained on the continued limited supply of tonnage. Timber chartering is still restricted owing to the variance in ideas between shippers and owners. The same remarks apply to boats on time as well as to coal.

We have nothing to add to our remarks of last week in regard to sail tonnage, except that the demand for lumber vessels from the Gulf to South America seem to have been satisfied and new orders will not permit the rates latterly ruling. In other lines there is no change whatever.

We are advised that the H. W. Johns Manufacturing Co., of New York, have secured a contract for supplying and applying their Asbestos Fire Felt Covering for the steam pipes, boilers and drain pipes at the Havana Brewery, Havana, Cuba. We learn that they are sending skilled labor from New York to carry out their contract, and it is the first instance of this kind that has come to our notice. There are a number of new power plants being constructed in Havana, and the H. W. Johns Manufacturing Co. believe in being on the field with their skilled labor and materials to insure their getting the work.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Collision—Distribution of Damages Between Vessel and Cargo—Harter Act.—The whole object of the Harter act is to modify the relations previously existing between the vessel and her cargo, and it does not affect the relative rights of vessel and cargo owners as claimants against a second vessel for damages arising from collision. In re Lakeland Transp. Co., 103 Fed. Rep. (U. S.) 328.

Contributory Negligence—Damages.—Where a city is negligent in failing to maintain the lights required by law on a drawbridge, and the pilot and captain of a steamer are also negligent in attempting to take their boat through the draw before they are assured that it is fully swung, the damages sustained should be divided. Smith et al. vs. City of Shakopee, 103 Fed. Rep. (U. S.) 240.

Regulations of Light-House Board.—The courts of admiralty will take judicial notice of the regulations of the Light-House Board, made upon the authority of an act of Congress, and prescribing the number and kinds of lights to be placed on the draws of bridges across navigable streams, although they are neither pleaded nor offered in evidence. Smith et al. vs. City of Shakopee, 103 Fed. Rep. (U. S.) 240.

Priority in Distribution of Damages—Claims of Crew for Loss of Effects.—The negligence of a ship is so far imputable to her officers and crew that they are entitled to recover from another vessel but half the damages sustained in the loss of their effects as the result of a collision for which their own vessel was equally in fault, and their claims therefore are subordinate to those of the cargo owners. In re Lakeland Transp. Co., 103 Fed. Rep. (U. S.) 328.

Maritime Liens—Advances and Charges Paid by Subcharterer.—No maritime lien exists on a vessel, in the absence of express contract therefor, for advances made to the crew without the knowledge of the master, or for port charges paid, in favor of a charterer for a voyage, whose charter was not with the owner, but with a time charterer, who was bound by his charter to pay all such charges, and if which fact his subcharter was charged with notice. The Solveig, 103 Fed. Rep. (U. S.) 322.

Negligence—Lights on Drawbridge—Requirements of Statute.—Under the regulations of the Light-House Board, requiring the suspension of lights on drawbridges, so that three red lights will be seen up and down stream when draw is closed, and three green lights when it is open, the failure of a city to maintain such lights on a drawbridge erected by it is such negligence as will render it liable for damages to a steamer resulting from such omission. Smith et al. vs. City of Shakopee, 103 Fed. Rep. (U. S.) 240.

Pilots—Tender of Services—Right to Compensation.—Code N. C. §§ 3502, 3505, which provide that if any master of a vessel, not having a pilot on board, coming over the bar and into the Cape Fear river, or up and down such river, shall refuse a pilot across the bar, such pilot shall be entitled to the same pilotage as if he had been actually employed, are not applicable to a barge without motive power, and in tow on a coastwise tug having on board a regular pilot. The Carrie L. Tyler, 103 Fed. Rep. (U. S.) 326.

Obligation to Take Pilot—Barge in Tow.—A barge without motive power, in tow of a tug having a regular pilot on board, is not within the provisions of Code N. C. §§ 3480, 3481, 3519, requiring vessels to employ a pilot in crossing the bar at the mouth of Cape Fear river, and passing up and down the river, and providing for a forfeiture where any one not being licensed acts as pilot in such case. In contemplation of law, the tug and tow are one vessel, and the pilot of the tug is the pilot of the voyage. The Carrie L. Tyler, 103 Fed. Rep. (U. S.) 327.

Claim of Charterer for Loss of Freight.—The claim of a charterer having full control and management of a vessel, and supplying her master and crew, for loss of freight resulting from a collision, for which such vessel was adjudged equally in fault, against the fund arising from the sale or bonding of other offending vessel in proceedings instituted by her owners for limitation of liability, stands on the same footing as that of the owners of the chartered vessel, and is subordinate to that of the owners of her cargo. In re Lakeland Transp. Co., 103 Fed. Rep. (U. S.) 328.

Loss of Cargo—Subrogation of Vessel Owner to Insurance.—Where, in a suit for limitation of liability arising out of a collision which resulted in the loss of the second vessel and her cargo, such vessel, although adjudged equally in fault, claimed and was awarded exemption from liability to her cargo owners under the provision of the Harter act, her owners have no right to be subrogated to the claims of the cargo owners against the insurer of the cargo, under the "benefit of insurance" clause of the bill of lading, because the court awards the entire fund for distribution to the cargo owners in preference to the vessel owners on account of the vessel's contributing fault, on the theory that such action necessarily imposed on the vessel the liability for loss of cargo. In such case the payment of claims entitled to legal preference, as permitted by admiralty rule 55, cannot be said to take anything from the holder of inferior claims, who have no interest in the fund until preferred creditors have been satisfied. In re Lakeland Transp. Co., 103 Fed. Rep. (U. S.) 328.



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CLEVELAND, O., OCTOBER 4, 1900.

TO ENLARGE THE WEITZEL LOCK.

At the next session of Congress a proposition will be advanced looking to the immediate enlargement of the first (the Weitzel) lock in the ship canal at Sault Ste Marie. This is the smaller of the two locks through which pass the commerce of the northwest, and is 600 feet long. The Poe lock is 100 feet wide and 800 feet long. When the Poe lock was completed it was supposed the two would be ample to handle all commerce that could possibly arise on the lakes for the next several decades; but now it is necessary that there be twice as much room. The engineers have figured that the Weitzel lock must be increased in width to more than 100 feet and lengthened to 1,500 or 1,600 feet and deepened to 25 feet over the sills. Authorization for this work will be asked next winter and there can be no doubt that it will be granted and the money appropriated. It will cost \$9,000,000.

So great has been the increase in size of lake ships that the Weitzel lock, which used to hold two or three of the largest vessels at one lockage, now holds but one; while the Poe lock, big as it is, has capacity for but two of the largest size. The proposed Weitzel lock will be big enough to pass at one time three of such ships as the Gates, Hill or Edenborn, with their 500 feet of length, and 52 feet of beam. The Poe lock of today is on the site of the canal of 1855 and the new Weitzel will occupy the room of the lock of 1885.

HANDLING VESSELS IN THE CHICAGO RIVER.

The towing companies and others handling vessels in the Chicago river who have tried to gauge the current have given it up. They have at times thought that they would be able to get it down to a working basis, but a sudden change in the wind or the raising or lowering of the bear trap dam at Lockport has invariably upset all their figuring. When the wind gets around to the north or northeast, or is due east, it raises the level of the river and forces so much water into it that in places, especially where the river is narrow, as around the bridges, it creates such a swift current that it is extremely difficult for tug men or vessel captains to handle their boats with safety.

The Inter Ocean says: "Vesselmen suggest that the flow of water over the Lockport dams should be gauged and regulated in accordance with the change of the wind. This method, they believe, will make it more easy to calculate the force of the current and enable them to handle their boats with more security. It will also render them less likely to collide with the bridges. A very stiff current late Monday night was the cause of two boats striking bridges. The steamer Pontiac, in tow of the tug O. B. Green, going

up the river, collided with the south protection to Harrison street bridge, doing about \$30 damage, but failing to injure the steamer. The lumber schooner Cora A., coming in, while in tow of the tug Rotta, ran into Clark street bridge and lost her foremast and was damaged otherwise. The current was too swift for the tug to handle her, and she became unmanageable. With a slower or regular current all such accidents might be avoided, so some of the vesselmen say."

YACHTING EXPENSES.

The sums of money that our wealthy citizens annually devote to yachting are almost incomprehensible. Roughly speaking, the annual cost of running a steam yacht each season for three to five months, is about one-sixth of the original cost of the boat. Howard Gould spends about \$125,000 a year on the Niagara. Mrs. Golet and W. K. Vanderbilt each spend a like sum, and James Gordon Bennett as much, if not more. Of fully a score of the forty-nine most magnificent American yachts it may be said that each costs its owner \$50,000 or more each season.

It is estimated that the cost of maintaining a large yacht is about \$1,000 for each member of the crew, counting coal, provisions, repairs, etc. The Niagara's crew number eighty men, the Valiant's eighty, the Nahama's eighty, the Varuna's seventy, the Josephine's sixty, etc. But the \$1,000 per man does not take in the owner's princely entertainments on board, his champagne bills, and other forms of extravagance, and it is often the case that entertainments on yachts are more lavish than on land.

A CANADIAN ROUTE TO THE COAST.

There is a favorite project in Canada, more or less of a private enterprise, for building a barge canal from Georgian bay up the French river to Lake Nipissing, then through a chain of very small lakes and across the divide to the Ottawa river, and down to Montreal. The Ottawa river can be quite easily canalized in its upper waters, and there would be considerable slack water navigation in the river itself.

Some of the Canadian papers have been discussing the proposed American deep waterway and comparing it with the Ottawa river project. The Canadian plan has been always for a fourteen foot barge canal, and not for a deep waterway. Now there is a change in the sentiment in the Dominion press, and the Montreal Star suggests that the fourteen foot canal might not be so advisable as a twenty-one foot channel over the Ottawa route. The Star thinks that the United States will surely build the deep waterway.

George Y. Wisner of Detroit of the deep waterway commission, speaking of the Ottawa river project, said:

"It is a very short route. There are only 420 miles of canal and river between the Georgian Bay and Montreal. The route is so short that were it built it would make Montreal just as near Duluth and Chicago as Buffalo is now. It would take a little more time for a vessel to go from Chicago or Duluth to Montreal by that route than to Buffalo, because of the difference in speed in the canal and in the open waters of the lakes. But it is a short cut to the sea and there are no serious engineering difficulties to be overcome.

However, I have no confidence in the scheme, from a business point of view. The bulk of the traffic of the lakes is in ore and coal, or between the eastern shippers and their western markets. Ore and coal must seek each other, so the Superior and Erie commerce would not be affected. The only lake traffic that could be diverted to this short route to the sea would be in the export trade, and that is mainly in foodstuffs. There is good reason to believe that the export trade of the northwest in foodstuffs will decline and that each year the amount consumed at home in eastern markets will increase, until practically a very small per cent. of the wheat crop of the northwest will find its way abroad. Admitting everything that can be said about the shortness of the route, and the readiness with which it can be constructed, I do not believe the canal would pay for the cost of construction, either as a deep waterway or as a barge canal.

Our thanks are due the Maryland Steel Co., Sparrows Point, Md., for a courteous invitation to the launch of the dredging steamer Thomas on Oct. 2, built by the firm to the order of the Metropolitan Dredging Co. and Andrew Onderdonk, and at which time an elegant luncheon was served. We much regret that the distance prevented our acceptance of the transportation facilities offered including other special favors.

LICENSE SUSPENDED.

Steamboat Inspectors Monaghan and Chalk, of the local Steamboat Inspection Service, of Duluth, have completed their investigations as to the responsibility for the collision between the ferry steamer Mayflower and the tug George Emerson, on Sept. 15, by which the former was sunk in the Duluth bay. The inspectors find that S. B. Swank, the pilot of the Mayflower, was at fault, and his license is suspended for 60 days.

The full decision is as follows:

It appears in the testimony that the collision occurred at, or near the turn in the channel entering Tower slip. The Mayflower was coming out from the ferry dock at a speed of seven or eight miles an hour. Her pilot claims he did not see the Emerson's lights until within 100 or 150 feet of her. He then gave an alarm signal, and a signal to the engineer to back. The boats struck each other just as the Mayflower backed. The Emerson's speed was checked to four or five miles an hour before passing the tug Gillen and scow, which were in the channel about half way between Barker's dock and the lumber dock. The red light of the Mayflower was seen when this tow was passed, and she was then about 500 feet away. One whistle was blown at this time by the Emerson, and all her lights were burning brightly. The Mayflower was struck on her starboard bow and, therefore, must have been crossing the bows of the Emerson at the time.

It is found that the pilot of the Mayflower was at fault and neglectful of his duties in failing to see the Emerson's lights, or to hear and answer her passing signal in time to avoid collision.

For violation of Section 4450, Revised Statutes, the license of Samuel B. Swank, pilot of the steamer Mayflower, is hereby suspended for a period of sixty (60) days, commencing September 28, 1900.

(Signed)

JOHN MONAGHAN.

(Signed)

M. CHALK, Local inspectors.

SHOOTING CANNON AT CLOUDS IN FRANCE.

An effort is being made in this section of France to dissipate hail storms by firing cannon at the clouds. Fifty-two cannon, manned by 104 cannoneers and their chiefs, have been distributed over an area of 2,500 acres of rich vine land. For the expense of the experiment, the Government appropriated 2,000 francs (\$386), the departmental council 1,500 francs (\$289), the National French Agricultural Society and a number of wealthy wine growers added 12,000 francs (\$2,316) and furnished fourteen more cannon. The Minister of War supplied powder for 2 3/4 cents per pound.

A high point in the vine land to be covered by the experiments was selected as the central post of observation, and a signal code adopted. When a shot is heard from the central post all the cannon are fired, at first twice per minute; more slowly after the first ten shots. I translate the report of the first firing at the storm clouds this season:

The farmers of Denice were aroused at 1.30 o'clock on the night of June 5-6. The storm was very severe. The artillerymen, from 40 to 50 strong, fired their guns and stopped the thunder and lightning. In the neighboring communes, the people saw columns of flames rise 300 feet above the cannon when the shots were fired. At several places, women recharged the cartridges.

The wine growers are organizing to attack the hail storms in many of the great wine-growing regions of France. The two experiments thus far reported are pronounced successful. A writer in one of the wine-growers' organs says:

The results obtained from these experiments are such that organizations will be established at once in all the places that have heretofore been ravaged by hail.

I am told that the practice of shooting at the clouds was known in France over a hundred years ago, and that it originated in Italy. It is to be more extensively carried on this year than ever before. JOHN C. COVERT, Consul.

Lyons, June 25, 1900.

The largest steam dredge ever built on the Pacific Coast is being constructed near Seattle. The craft when completed will be 145 feet in length, 34 feet beam and 11 1/2 feet in depth. The work will be commenced in 26 feet of water and will be continued for harbor purposes around the island to Steamboat Slough. The channel when completed will have a depth along its entire course of 26 feet at low tide. The purpose of this dredge will be to excavate 2,750,000 cubic yards of sand and mud from a channel, which will be 27,000 feet in length and from 100 to 200 feet in width. The debris will be pumped to the shore through a huge pipe resting on pontoons and deposited behind bulkheads. It will be brought to the surface by a centrifugal pump.

EXTENSIVE DREDGING.

The enormous amount of work which has to be done to keep efficient the navigational approaches of the port of Liverpool, England, is strikingly illustrated by the report on the present state of the navigation of the river Mersey made to the Mersey Conservancy Commissioners by the acting conservator. The bar no longer exists as a hindrance, for the least depth at low water of springs, in the cut which has been dredged through it, is practically 27 feet. The labor involved in securing and maintaining this depth is of herculean proportions. During 1899 some 2,067,000 tons of detritus were dredged from the bar cut, and 4,592,000 tons from the approach channels, making a total of 6,659,000 tons dredged from the sea channels of the Mersey during 1899, or from the commencement of operations in September, 1890, no less than 45,148,860 tons. All of this silt has, with the exception of 4,250,000 tons, been dredged by the two vessels, which have a hopper capacity of 3,000 tons each and pumps which can work at a depth of 40 feet and load up in 45 minutes. In addition to the work mentioned, some 1,374,670 tons of sand were removed from the seaward portion of the Mersey estuary during 1899. The responsibility for the maintenance of a proper depth of water in the Manchester ship canal and its approach rests with the canal company, the Mersey commissioners satisfying themselves that the river fairway is not prejudiced in any way. Altogether 1,375,272 tons of silt and detritus were dredged from the canal and 70,400 tons from the approach channel near Eastham. Not the least important work of the commissioners is the allocation of sites for the deposition of silt dredgings and the Liverpool town refuse, which in 1899 amounted to 147,670 tons. The sea sites selected were evidently well chosen, for during the past year there seems to have been an all-round improvement in the depths of the navigable channels connecting the Mersey estuary with the Irish Sea. No fewer than 45,158 vessels passed through the Queen's channel, making, with the smaller craft using the Rock and Formby channels, a total for the year of 52,216 vessels, or a daily average of 143. But even with adequate deep water channels which are admittedly the best lighted and best buoyed in the world, no fewer than 59 wrecks and casualties occurred during the year. The total wrecks and severe casualties amounted to 35, and of these vessels four were destroyed, seven removed, and six raised by the Mersey Docks and Harbor Board, while 14 were removed by their owners. From these facts it is quite evident that the Mersey Conservancy Commissioners perform their onerous duties in the same thorough going manner that characterises the conduct of the great trust controlled by the Mersey Docks and Harbor Board.

LETTERS AT DETROIT MARINE POST OFFICE.

October 3, 1900.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Ashie, John.	McDougall, W. R., Sitka.
Adams, Mrs. S. M.	McMahon, J., W. P. Ketcham.
Adams, Alex.	McMillan, D. B., Kaliyuga.
Bradley, Horace, T. W.	Pal-McLaughlin, F., Minneapolis.
B—, Duffey (not legible).	[mer. McGear, J. A., Watt.
Brisbin, D.	McDonald, Jerry, Maryland.
Bobery, John.	McGuire, Martin, Resper.
Bennet, Jay A.	Newman, J., Cornell.
Beauvais, Miss Dellia.	Patterson, H. A., C. Campbell.
Clark, D. H., Bge 201.	Pierce, M. E.
Coons, Frank, Denver.	Rojeon, James.
Crone, C. A., V. Swain.	Russ, John, Santa Maria.
Church, Joseph, M. M. Drake.	Randall, J. P., Roby.
Crooker, Abraham, Our Son.	Sweeney, Ed., Tampico.
Fetzer, Orbe, Shenandoah.	Smale, John, Maryland.
Firby, Harry, Shenandoah.	Smith, Wm. H., America.
Faulis, John.	Sherman, B. F., Santa Maria.
Forbes, Harvey.	Skelly, Dennis, Bge. 86.
Ferrier, W. C.	Simpson, Alex.
Gooldorf, John, Armour.	Switzer, C. W., Lagonda.
Howard, Chas., Carrington.	Shaver, H. E.
Holt, Miss Mary.	Saph, Mrs. Jay P.
Jenkins, David, Roby.	Tisdale, Miss May.
Lohr, Merrill, Roby.	Voight, Mrs. Geo., Wemco.
Loneridge, John, Harper.	Vincent, Joe.
Little, Fred.-2.	Vim, H., Cornell.
Morton, Alfred.	Vanslet, A.
Mavatz, Guy.	Willis, George, M. M. Drake.
Merrell, Oren.	Warner, H. J.
Moran, B.	Watson, R. G., R. Packer.
McPhee Albert, Isaac L. Bell.	Whitty, W. W.
	F. B. DICKERSON, P.M.

THE "EVOY," OR JUMPER STAY COMPASS.

If we accept, and there is no valid reason for not doing so, Dr. Scoresby's conclusion that no continued accuracy of guidance can be relied on in any compass exposed to the ship's full magnetic influence, it is obvious, as the magnetic "pull" varies inversely as the square of the distance, that the further we remove our standard compass from the disturbing influences of the ship the more reliable the readings of that instrument will be.

But it is one thing to swing a compass seventy or eighty feet aloft, and quite another matter to take a reading of it while at an altitude where lines of force cease from troubling and the needle is at rest. However, the "Evoy" compass, as will be seen from the following description, allows of this desirable consummation being carried out, for, though its use does not necessitate taking a man to the compass, its mechanism is such as to ensure the locking of the dial while at its greatest altitude, and the bringing of the instrument, with the dial still locked, to the deck, where the reading from it is made in the ordinary way.

Briefly described, the instrument consists of an improved form of spirit compass on the lines of the liquid compass used by the admiralty, so designed and constructed as to allow of its being hoisted sufficiently high aloft as to place it quite beyond the range of any local or induced magnetic lines of force due to the metallic structure of the hull, or any dynamos on board, or even to some cargoes, the mechanism being so arranged as to insure that while the card swings absolutely free from any such inductive influence when aloft, the first effort to haul the instrument down instantly locks the card in place, and as the card is not again freed, the magnetically uninfluenced reading obtained while aloft is brought down to the bridge, or deck, level, when comparison with and correction of the ordinary steering compass may be readily and accurately made. As the lubber line is actually brought against the card when the reading is taken, a smaller size compass is permissible, the size adopted having a 4 3/4 inch card. Viewed merely as a compass, the "Evoy" form of the instrument is as perfect in details of construction as it is possible to make it, and to this point the commanders of many of our largest ships have testified.

NOTES.

THE Bethlehem Steel Company, of South Bethlehem, Pa., have received a cable from their representative in Russia announcing that the government had awarded the company the contract for furnishing 2,000 tons of Krupp process armor for the new battleships of the Czar's government, the Alexander III, Orobino and Orel, which are now being built at St. Petersburg. The contract was received in the face of strong competition from French, German and other foreign manufacturers.

THE Schulz system of water-tube boiler, which is a modification of the Thornycroft, is being more and more adopted in the German navy. The battleship Wurttemberg has lately received these boilers, and they are to be supplied to the new cruiser Nympe; the new battleship Kaiser Wilhelm der Grosse is supplied with one-half of their boilers, the old cylindrical pattern, and the other half the Schultz, while the battleships Kaiser Friedrich III and Kaiser Wilhelm II have two-thirds of their boilers cylindrical and one-third of the Thornycroft pattern; the new armored cruiser Furst Bismarck has two-thirds of her boilers cylindrical and one-third Schulz, while all the new ships will be fitted with boilers of this type.

EDISON was recently credited by the the New York Press with having made a discovery which would practically do away with the use of steam, and make it possible to run ships across the Atlantic in four days. One has become so used to hearing tales of wonder and Mr. Edison that this one was doubtless received by many readers with the most unquestioning faith. But there are others less easily satisfied, and in the list one finds Science Siftings. That journal reads Mr. Edison. There is nothing new in the invention we are told, and the apparatus is of no importance, from a commercial point of view. Thus are our hopes of a four days' passage to New York once again hurled to the ground.—London Syren and Shipping.

LAUNCH OF THE ASCUNCION.

The canal-sized steel steamer Ascuncion was successfully launched at the Lorain yards of the American Ship Building Co. on Saturday afternoon. The christening ceremony was performed by Miss Mary Johnson, Cleveland.

DULUTH-SUPERIOR.

Special Correspondence to The Marine Record.

Lumber carriers are in fair demand at the head of the lakes and \$2.25 is freely offered to Lake Erie ports. Grain cargoes are plentiful at Chicago and 2 cents on wheat to Buffalo is expected this week.

The Superior Ship Building Co., will be very active the coming winter in constructing two 350 foot boats for the new Hanna fleet. It is reported also that two new boats will be built for the Western Transit Co., and that they will be similar in size to the Troy and Buffalo.

The wheat rate is quiet at 1 1/4. It is expected that Duluth elevators will receive much corn the coming winter. Discussion here of next season's probable lake freight rates is of a varied character no two judging alike. A local vesselman said that the vessel agencies are not making expenses.

Lake captains and sailors condemn the fact that many sailing vessels alleged to be unseaworthy are allowed to be operated. It is claimed that there is no inspection for sailing vessels, and that any old kind of a craft can be sailed on the Great Lakes, imperiling lives and property, providing a crew can be found.

Major G. A. Marr, Corps of Engineers, U. S. A., superintendent of Portage Lake waterways, announces that the speed limit on vessels in Portage river has been removed. The revetments are completed and vessels may go through at full speed. The limit is still maintained in the upper ship canal where work is still going on.

The southerly one of the new Duluth ship canal piers which are under construction at this port is rapidly approaching completion and this fall will see it finished. Work is progressing favorably upon the northerly pier but another year will be required before it will be ready to turn over to the government. The substructure of the southerly pier was built by King & Steele, of Duluth, and the substructure of the northerly pier is being built by the Butler-Ryan Co., of St. Paul. Charles Stone, of St. Paul, is the contractor for the superstructure of both piers. Five men have been killed on the canal pier work since it was begun.

President J. J. Hill's scheme for a big steamship line to the orient seems to have taken shape in articles of incorporation filed with the Secretary of State by the Great Northern Steamship Company, with a capital stock of \$6,000,000. The purpose of the company is stated to be the building and operation of steamships on the high seas and other navigable waters. The incorporators, and also the members of the first board of directors are: James J. Hill, D. Miller, W. P. Clough, M. D. Grover, and A. W. Clark, all officials of the Great Northern Railroad Company. The officers are not named, but the date of the first annual meeting is fixed for February 1, in St. Paul, which will be the headquarters of the company. The capital stock is divided into 60,000 shares of \$100 each. The filing fee was over \$3,000. The Hill system at present includes the lake steamship line between Buffalo and Duluth, and the trans-continental railroad. The new company will extend its business to Asia.

FLOTSAM, JETSAM AND LAGAN.

The two Atlantic liners to be built by the Maryland Steel Co., at Sparrows Point, for Kidder, Peabody & Co., of Boston, will be the largest freighters afloat.

The body of Retta Bacon, the woman cook lost in the sinking of the schooner John Martin, was picked up near the Port Huron water works Friday by a marine reporter.

William Palmer has contracted with George L. Welt, of Waldboro, Me., for the construction of a new five-master of 4,000 tons coal capacity, to be named the Baker Palmer. The keel will be laid next month.

The sale of the schooner Fostoria under a libel claim at Port Huron, Sept. 20, was confirmed by Judge Swan. The Fostoria brought \$190 under the hammer, the libellant being Jennie Hover of Port Huron.

A big cargo of oats was taken out of Manitowoc Sept. 21 by the steamer Orlando M. Poe. The aggregate was 360,000 bushels, composed of 225,000 bushels of oats, 75,000 bushels of wheat and 60,000 bushels of corn.

The American Ship Windlass Co., of Providence, R. I., has been awarded a "Gold Medal Diploma" by the United States Commission of the Paris Exposition for their improved and efficient steam capstan windlass.

Capt. William Nicholson of the car ferry Ann Harbor No. 3 states that in ordinary weather he can pick up the light at the Sturgeon Bay canal entrance when distant five minutes from Frankfort harbor. The distance is 60 miles.

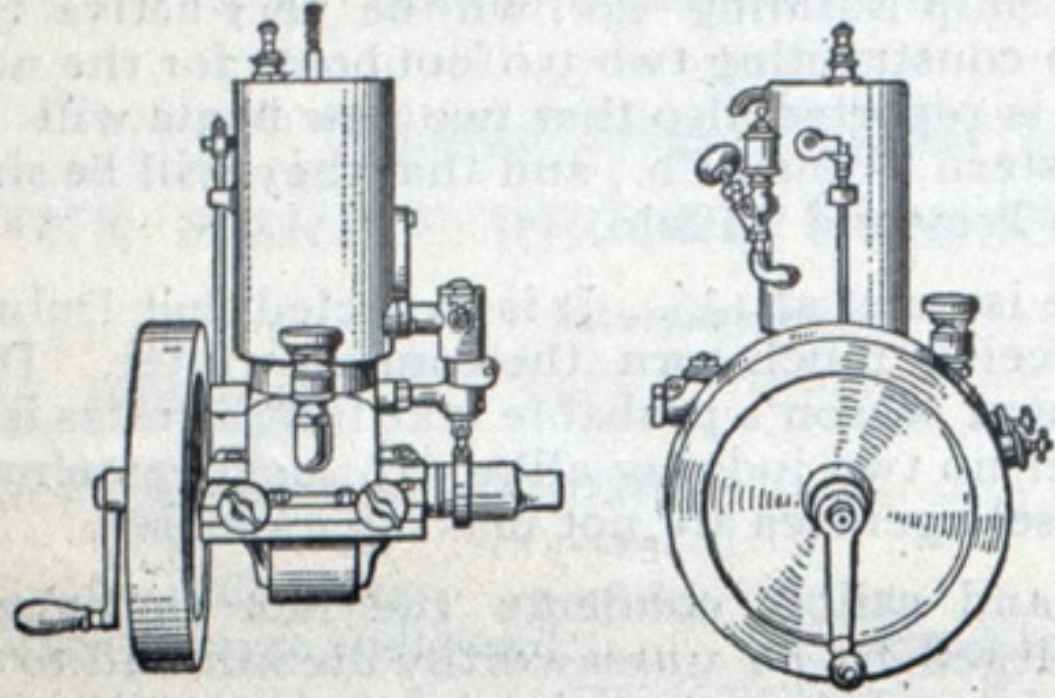
The lighthouse erected last year by the Canadian government between Four Mile and Nine Mile points has been destroyed by the action of the waves. The foundation was first undermined by water and then the whole structure fell.

A Menominee branch of the Licensed Tugmen's Protective Association has been organized with a membership of 50. The organization includes men from Green Bay, Sturgeon Bay and along Lake Michigan as far south as Two Rivers, Wis.

The water in Portage Lake has been exceptionally high for the past two months, and at the present time stands 14 inches above normal. There is usually no current, but a very perceptible flow has been noticed from the upper canal during the last ten days.

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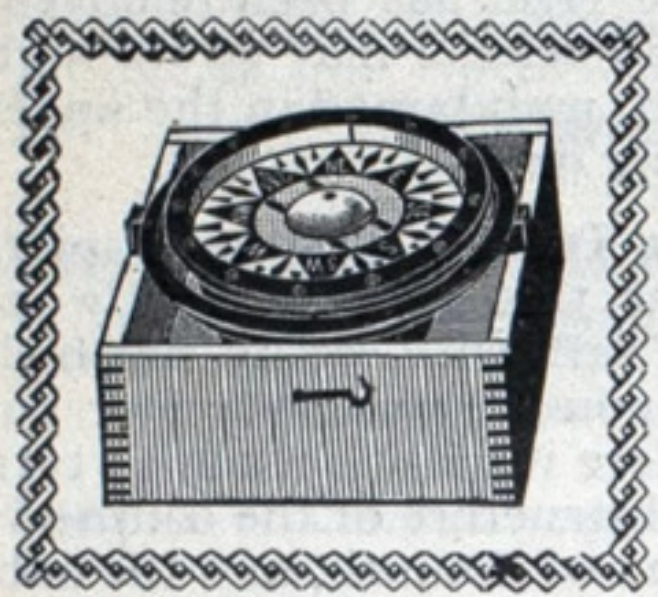
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THE HEAVENS.

The long nights of fall and winter time have now fairly set in, and for six months to come the opportunity will be afforded to every one who cares to take an interest therein to become in some measure acquainted with the face of the sky. The beautiful constellations now visible, Cygnus, Aquila, Cassiopeia and Andromeda, and those that will soon fill the arch of heaven the long winter through, such as Orion, Taurus, Lepus, etc., should prove interesting to every thoughtful person.

In October the moon is full on the 8th. First quarter is on the 1st, and last quarter on 15th. New moon occurs on the 23rd. The tenth day of the moon's age was on 3rd October, and as Copernicus, one of the grandest of the lunar mountains was then on the terminator.

Jupiter is now rapidly nearing the sun, and is also quickly moving eastward in his circuit. His movement can be watched, such a star as Beta Scorpii being used as a measuring point. However, by the end of the month he will be so near the sun that he will most likely be seen only by keenest watchers, as he will set soon after sundown.

Saturn is still a fine object in the evening sky, hovering close to the western verge of the Milky Way in Sagittarius.

Uranus, a planet not often picked up by amateurs, will be very near Jupiter on the evening of the 19th. It will be just twenty-five minutes of arc, or not quite a moon's breadth south of Jupiter.

During September, Venus was a morning star and towards the end of the month could be seen so late as 10 a. m., shining in daylight. The unaided eye could easily see it. In October it is still a morning star, but getting nearer the sun. Mercury is an evening star.

Mars is now a fine object in the skies of early morning, and being in Cancer is well placed for observation.

Two occultations occur in October which will be interesting. On the 12th the moon will occult the star Zeta Tauri, and the planet Uranus on the 26th.

The following constellations can be well seen in October: Aquarius, Pegasus and Cepheus on the meridian, Cassiopeia, Andromeda, Cetus Aries and Pisces east of it, and Lyra, Cygnus, Delphinus Aquila and Capricornus west of it. On the 15th the following first magnitude stars are visible: Vega, Altair, Deneb, Formalhaut, Capella.

Among other objects the splendid Nebula Andromeda, near the star Nu Androm, and the magnificent double cluster in the sword handle in Perseus can be well seen.

The Orionid meteors and Delta Geminid meteors are due this month.

The hull of the steamship Venturic, building at Cramp's shipyard for the Oceanic Steamship Co., was launched on Wednesday afternoon. The steamer is 400 feet long, 50 feet beam and 23 feet depth of hold.

GALVANIC ACTION OF COPPER SHEATHING

It has been discovered that the brass bolts of the under-water fittings of the cruiser Spartiate have been badly corroded by the chemical action of the copper sheathing. The Ariadne and Spartiate, sister ships, are in dry dock at Portsmouth side by side, and both ships have been similarly affected. A few days since the Ariadne, when at her buoy, was found to be leaking rapidly, and it was assumed that a Kingston valve had been inadvertently left open. She was, however, hurriedly docked, when it was ascertained that, owing to the corrosion of the bolts inside and outside the ship, the mountings of one of the underwater fittings had fallen off; hence the inrush of water. The corrosion of the outer bolts of the Spartiate had previously been detected, but an examination of the inner bolts showed that the action was going on there also. A report on the discovery has been forwarded to the Admiralty.

The galvanic action of copper on other metals is by no means a new disease. For years we have been experimenting to overcome it, and for a time zinc was believed to be an effectual prophylactic. Then naval brass, so compounded as to embrace all the panaceas, was adopted, and now in two of our finest cruisers it has proved a failure. I leave it to the imaginative correspondent to describe what might have happened had the Ariadne lost the mounting of her underwater fitting while chasing the enemy during the maneuvers; but it requires little imagination to realize that serious damage may result from under-water fittings dropping off in the ocean owing to corroded bolts. One cannot, however, fail to smile at the comic side of the question. Here we have ships copper-sheathed in order that they may keep the sea for lengthened periods, and yet, because they are copper-sheathed, they cannot go through the maneuvers without becoming so leaky as to threaten their own safety.—Naval and Military Record of August 30.

INDUSTRIES OF SAULT STE. MARIE.

The industries of Sault Ste. Marie are rapidly becoming important. There are on the Canadian side of Sault Ste. Marie the Algoma Commercial Co., the Canadian Steel Co., the Sault Ste. Marie Pulp and Paper Co., and the Lake Superior Power Co.

American power companies are supplying power to the numerous companies above mentioned, and are also supplying the city of Sault Ste. Marie with both electric and water power. They have at the present time a capacity for developing 16,800 horse-power by forty-two turbine wheels of 400 horse-power each. The intention is to construct an additional one of much larger capacity in the near future. The pulp company is turning out 150 tons of pulp per day, practically all of which goes to France, Germany, and England. The managers have a large sulphide plant under construction, which will be finished in a very few weeks, and have

an output of 75 tons of chemical pulp per day. They also have very large iron works and manufacture a great deal of their machinery, including many electric appliances, and they have made in their own works the iron columns for their new buildings. They have also under way smelting works for the manufacture of pig iron, and, with the addition of the nickel ore received from their own mines at Sudbury, will make "ferro-nickel pig."

These companies also control on the American side of Sault Ste. Marie, Mich., the Lake Superior Power Co., the Union Carbide Co., American Alkali Co., and the Michigan Reduction Co.

They are constructing a canal on the Michigan side, and water-power works which will contain three hundred and sixty turbine wheels with a capacity of 125 horse-power each. The capitalization is \$3,500,000, and the works will cost that when completed. The water-power on the Michigan side will also be used to run factories similar to those now on the Canadian side, with a carbide mill and an alkali factory in addition. The product of the carbide mill is owned by the Carbide Co., of Chicago, and the product of the alkali factory by the American Alkali Co., of Philadelphia.

CHARLES E. TURNER, Consul-General.

REMOVAL OF PIERS.

Major Clinton B. Sears, Corps of Engineers, U. S. A., in charge of the conservancy and improvement of rivers and harbors on Lake Superior, has called for bids for the removal of the southerly old pier of the Duluth ship canal, the new one now being practically completed except on the harbor end. The bids will be opened at Major Sears' office Oct. 12, and it is specified that work shall begin as soon as possible this fall, after navigation has ceased to such an extent that the work will not interfere with the movement of boats. It is further provided that the work must be accomplished before Feb. 1. The contractor who gets the work will, therefore have to remove the old pier in about two months, though he may be able to begin operations before the close of November, if it should happen to be a short season, or if for any other cause the vessel movement during the latter part of that month should be light.

The old southerly pier contains considerable material, and it will be an undertaking of magnitude to remove it. In the pier are 2,275 cords of rock and 960,000 feet of timber. The contractor will require the service of a dredge with a tooth dipper to carry on the work. Most of the material will be dumped in the lake at some point to be designated by the engineer in charge. The old pier is 1,218 feet in length, and from 15 to 20 feet wide. When the boats begin moving next spring the old pier will have disappeared.

The light-house on the old pier will be transferred to temporary piers, where they will remain until the new steel light-houses are erected early next spring.

AIR SHIP IN SWITZERLAND.

At the invitation of Count Zeppelin, I was present at the trial ascent of his air ship, on the afternoon of July 2, at Manzell, on Lake Constance.

At 7 o'clock the great ship, 124 meters (407 feet) long and 12 meters (39 feet) in diameter, containing seventeen separate balloon compartments filled with hydrogen gas, was drawn out of the balloon house securely moored to the float. In twenty minutes all was ready for the ascent, and the ship left its moorings with Count Zeppelin in charge of one of the gondolas and Mr. Eugene Wolf, the famous explorer, in charge of the other, while Baron Bassus accompanied the party as meteorologist. At the moment of the ascent the wind was blowing at the rate of about 26 feet per second, giving the operators a good opportunity of testing the ability of the air wheels to propel the great ship against the wind. The cigar-shaped structure ascended slowly and gracefully to about 30 feet above the raft. The balances were adjusted so as to give the ship an ascending direction. The propellers were set in motion, and the air ship, which has cost considerably over \$200,000, started easily on its interesting trial trip. At first, the ship moved east against the wind for about two miles; gracefully turned at an elevation of about 400 feet, and, making a rapid sail to the westward for about 5 miles, reached an altitude of 1,300 feet. It was then turned and headed once more east, and after travelling about a mile against the wind blowing at the rate of 26 feet per second, suddenly stopped; floating slowly backwards 3 miles to the west, it sank into the lake, the gondolas resting safely upon the water. The time of the trip was about 50 minutes; distance traveled, about 10 miles; fastest time made, 5 miles in 17½ minutes; highest revolution of the propellers, 600 per minute; highest possible revolution, 1,200. The cause of the sudden stoppage in the flight of the ship was occasioned by a slight mishap to the steering apparatus, but the colossus floated gently with the wind until it settled upon the surface of the lake without taking any water. The raft was then brought up and the ship was easily placed upon it and brought back to the balloon house. The weight is 200 centners (22,000 pounds). The cost of filling the balloon with hydrogen gas was \$2,000.—James T. DuBois, Consul-General.

THE meteorological department of the Japanese government, as described by a pamphlet issued by the Tokio Observatory, is a very complete and practically useful organization. It has about 1,000 stations. Electrical, earthquake, and other exceptional phenomena are regularly observed in addition to the usual meteorological observations. All vessels belonging either to the imperial or merchant service which are over 100 tons burden are compelled to make observations at regular intervals six times a day, and the logs are forwarded to the central observatory. There is regular service of weather telegraphy and storm warnings. The average success of these forecasts is 82 per cent. and of the storm warnings 70 per cent. The present director is Prof. K. Nakamura, of Tokio University.

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 10TH DISTRICT,
BUFFALO, N. Y., September 27, 1900.

Notice is hereby given that the following buoys are reported as out of place or missing:

Galloo Island Shoal Gas-Buoy No. 1, Lake Ontario, New York. Out of position about 1,000 feet to the E. N. E.
Outer Buoy No. 1, 25 foot spar, Presqu'ile Bay, Lake Erie, Pa. Missing.

West Bank Buoy No. 20, 20 foot spar, Sandusky Bay, Ohio. Missing.

Twenty First Buoy No. 19, 25 foot spar, Maumee Bay Straight Channel, Ohio. Missing.

Fighting Island Upper Buoy No. 12, 20 foot spar, Detroit, River, Michigan. Missing.

These buoys will be replaced as soon as practicable.
By authority of the Light-House Board.

FRANKLIN HANFORD,
Inspector 10th L. H. District. Commander, U. S. N.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
Washington, D. C. September 27, 1900.

RACINE REEF BEACON LIGHT STATION.—Notice is hereby given that between October 1 and October 10, 1900, the light shown from the structure on Racine Reef, near the entrance to Racine Harbor, westerly side of Lake Michigan, will be raised 20 feet, by the addition to the structure of a light, pyramidal, skeleton frame.

The focal plane of the light will then be 57 feet above mean lake level. No other change will be made.

By order of the Light-House Board.

FRANCIS J. HIGGINSON,
Rear Admiral, U. S. Navy, Chairman.

WRECK AND CASUALTY REPORT FROM AUGUST 16 TO SEPTEMBER 15, 1900, INCLUSIVE.

COMPILED BY THE U. S. WEATHER BUREAU.

The period was free of storm conditions until the morning of September 11 when the West Indian storm area moved across the lakes causing damage to vessel interests during the period named.

Timely warnings were issued to all lake ports and to masters who could be reached, and it is probable that the comparatively small loss can be safely attributed to the warnings issued. Three vessels foundered, with the loss of 12 lives, besides considerable weather damage to vessels which were on the lakes during the heaviest part of the storm, amounting to about \$142,000.

1. September 9.—Steamer Parks Foster stranded 9 miles south of Manitowoc during dense fog; estimated damage to vessel and cargo of coal, \$2,500; released.

2. September 11.—Schooner Penobscott was damaged to the extent of \$1,500 from stress of weather off Kenosha, Wis.

3. September 11.—Schooner Badger stranded during heavy westerly gale in Hammonds Bay, Lake Huron; estimated damage to vessel and cargo of cedar, \$500.

4. September 11.—Schooner Narragansett was stranded on Drummonds Island, and released by heavy westerly gale and towed into harbor water-logged; estimated damage to vessel and cargo, \$1,000.

5. September 11.—Schooner Boscobel sprung a leak off Presque Isle, Lake Huron, during heavy westerly gale and was towed to Alpena, where she sank at the dock; estimated damage to vessel, \$500; will be released.

6. September 11.—Schooner Magnet foundered one mile northwest of West Sister Island, Lake Erie, during heavy

southwest gale; crew rescued by steamer Frank E. Kirby; estimated damage to vessel, \$2,000; no cargo; probable total loss.

7. September 12.—Steamer W. B. Morley stranded at the Limekilns Crossing on account of low water caused by the high southwest gale; estimated damage to vessel, \$2,500; released.

8. September 12.—Schooner Dundee, in tow of steamer Glidden, broke loose from steamer and foundered about 11 miles west of Cleveland during heavy southwest gale; estimated loss on vessel, \$40,000; cargo of ore, \$7,500; total, \$47,500; crew, with exception of woman cook, who was drowned, were rescued by the steamer C. Tower, Jr.

9. September 12.—Schooner P. B. Locke was damaged through stress of weather during heavy southeast gale on Lake Erie to extent of \$500.

10. September 12.—Steamer John B. Lyon, ore laden, foundered during heavy northwest gale east of Conneaut, Lake Erie, carrying down 11 of a crew of 15; the survivors drifted ashore in an exhausted condition; estimated value of vessel, \$65,000; cargo of ore, \$7,500; total, 72,500; total loss.

11. September 12.—Schooner Albatross lost all her canvass during heavy southwest gale; estimated damage to vessel, \$500.

12. September 12.—Schooner T. R. Merrett stranded during heavy southwest gale 9 miles west of Oswego; crew rescued; estimated value of vessel, \$5,800; no cargo; total loss.

13. September 12.—Schooner Albacore, endeavoring to enter Oswego harbor during high westerly gale, missed the piers and went on the shore just east of the life-saving station; crew rescued by the life savers; estimated value of vessel, \$4,000; no cargo; may be released.

14. September 12.—Schooner McDonald stranded during heavy westerly gale near Kingston; crew rescued; estimated damage to vessel, \$500; may be released.

15. September 12.—Schooner Lulu Beatrice, endeavoring to make harbor at Port Burwell during west gale, missed piers and stranded; one life lost; estimated damages to vessel \$1,000; cargo of coal.

REPORTED BY THE LOOKOUT.

Robertson & Southard, of Toledo, have sold the schooner W. H. Rounds to Charles Chamberlain, of Detroit. The price paid is not given out.

"Yes," said Farmer Snodgrass, "I've taken a powder for my headache, a pill for my liver, and a capsule for the gout in my foot. But I am darned if I can make out how the things know the right place to go after they get inside!"—Ex.

The suits for \$10,000 damages have been filed in United States court at Toledo against the owners of the schooner W. H. Rounds, for the death of seamen Crockett and James McKenzie, who were lost overboard from the schooner on October 28, 1899.

The wooden steamer John J. Hill was tied up at Marine City Friday. Capt. Murphy claims that the boat will not pay expenses at present freight rates, and he will therefore place her in ordinary. If rates do not improve in the fall he will soon lay her up for the winter.

The word "ship" is masculine in French, Italian, Spanish and Portuguese, and possesses no sex in Teutonic and Scandinavian. Perhaps it would not be an error to trace the custom of feminizing ships back to the Greeks, who called them by feminine names, probably out of deference to Athene, goddess of the sea. But the English-speaking sailor assigns no such reasons. The ship to him is always a lady, even though she be a man-o'-war. She possesses a waist, collars, stays, laces, bonnets, ties, ribbons, chains, watches, and dozens of other distinctly feminine attributes.—Collier's Weekly.

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F. A. FORBES, General Manager Michigan Telephone Co., Detroit, Mich.
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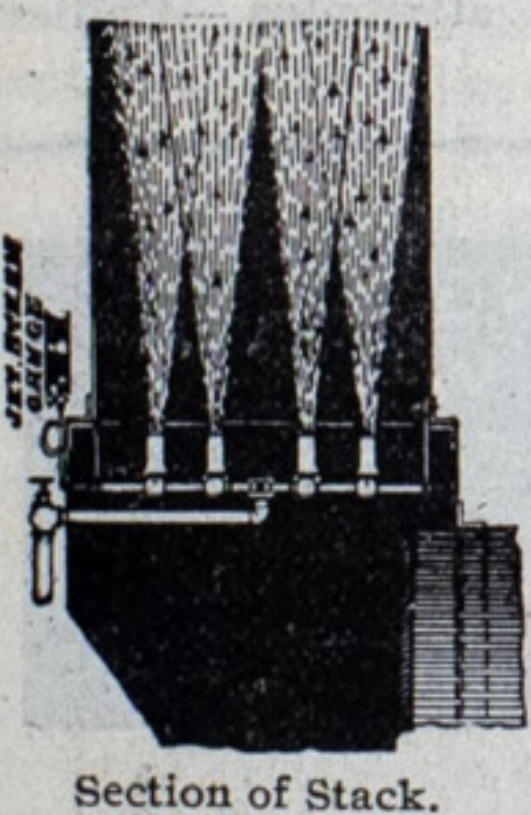
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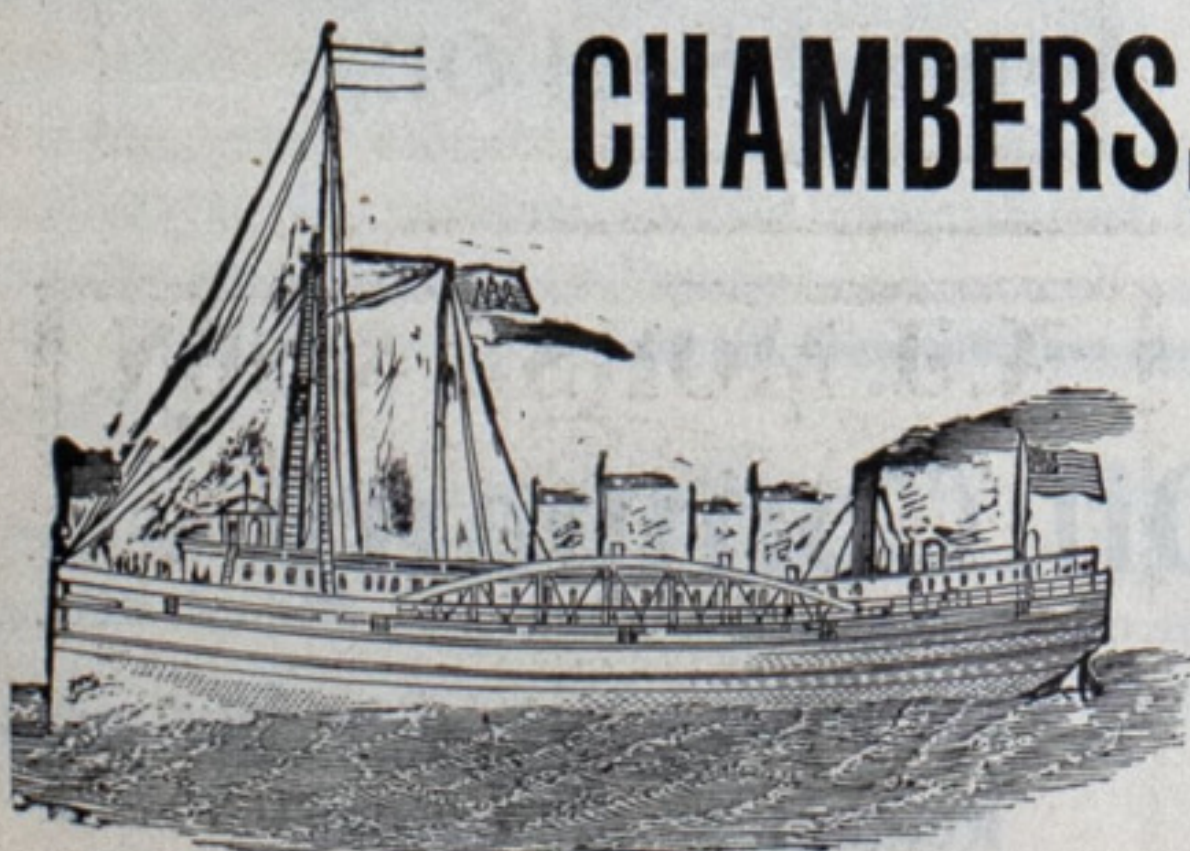
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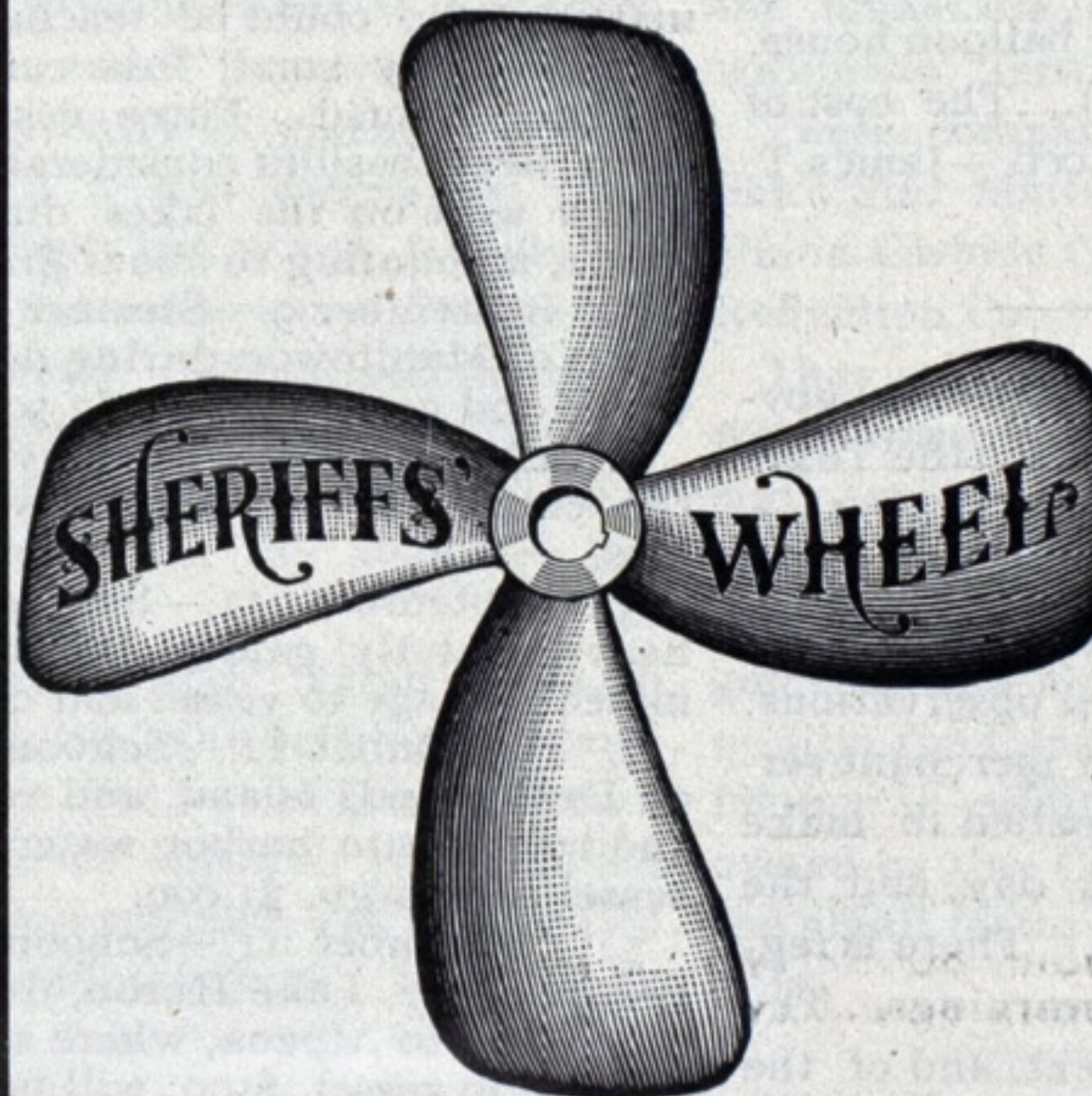
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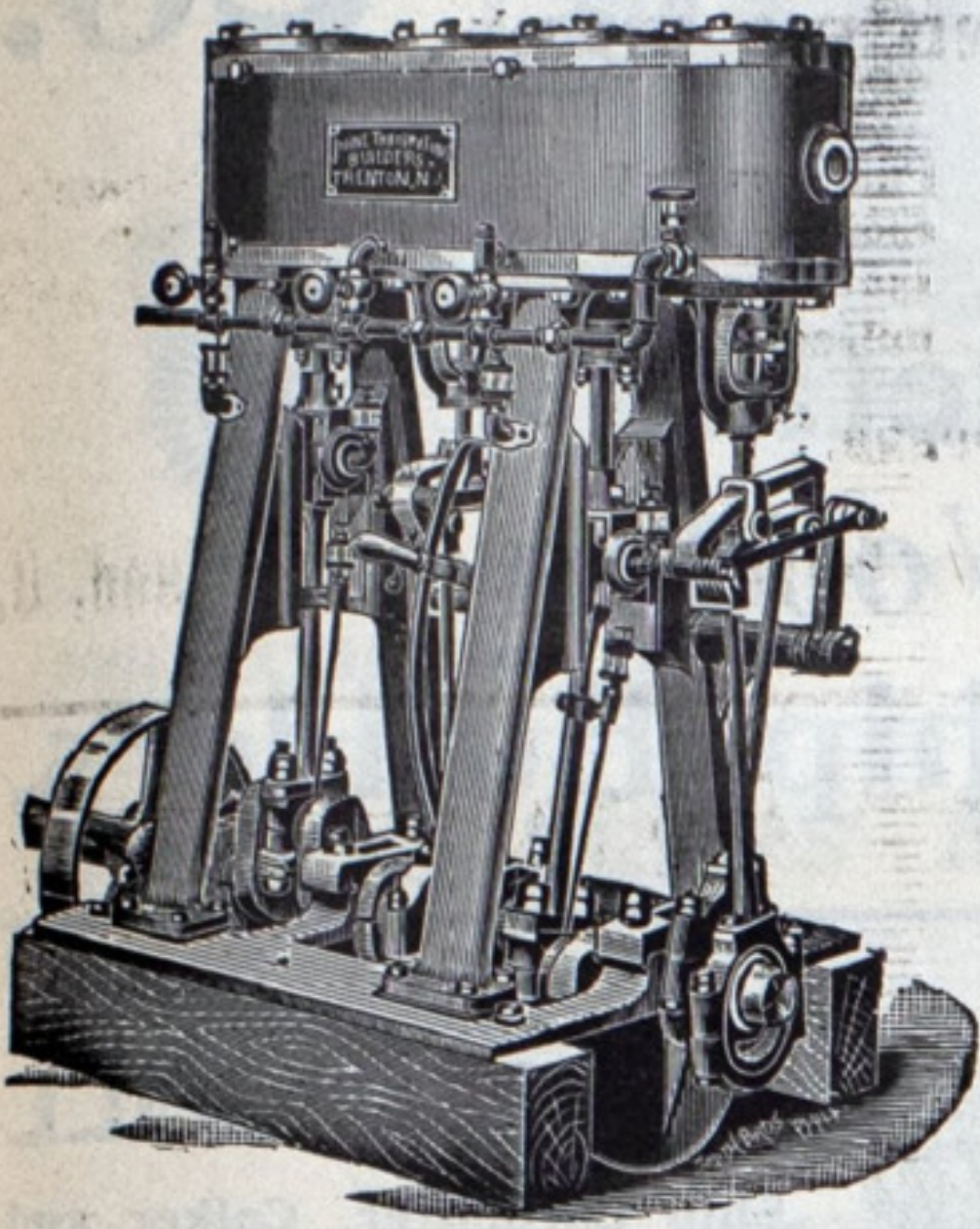
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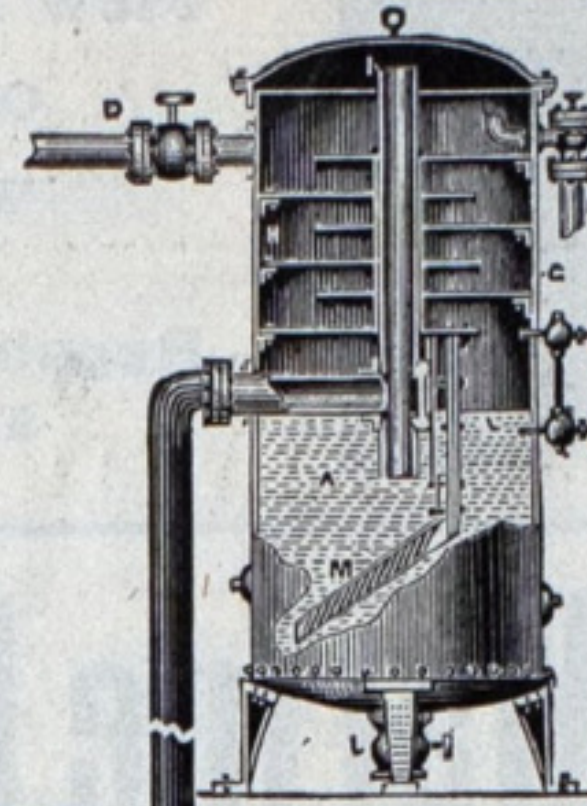
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CLEVELAND, O.

Government Proposals.

U. S. ENGINEER OFFICE, 185 Euclid Ave.,
Cleveland, O., September 8, 1900. Sealed
proposals for constructing breakwater and
piers at Black River Harbor, (Lorain), Ohio,
will be received here until 2 p. m., standard
time, Monday, October 8, 1900, and then
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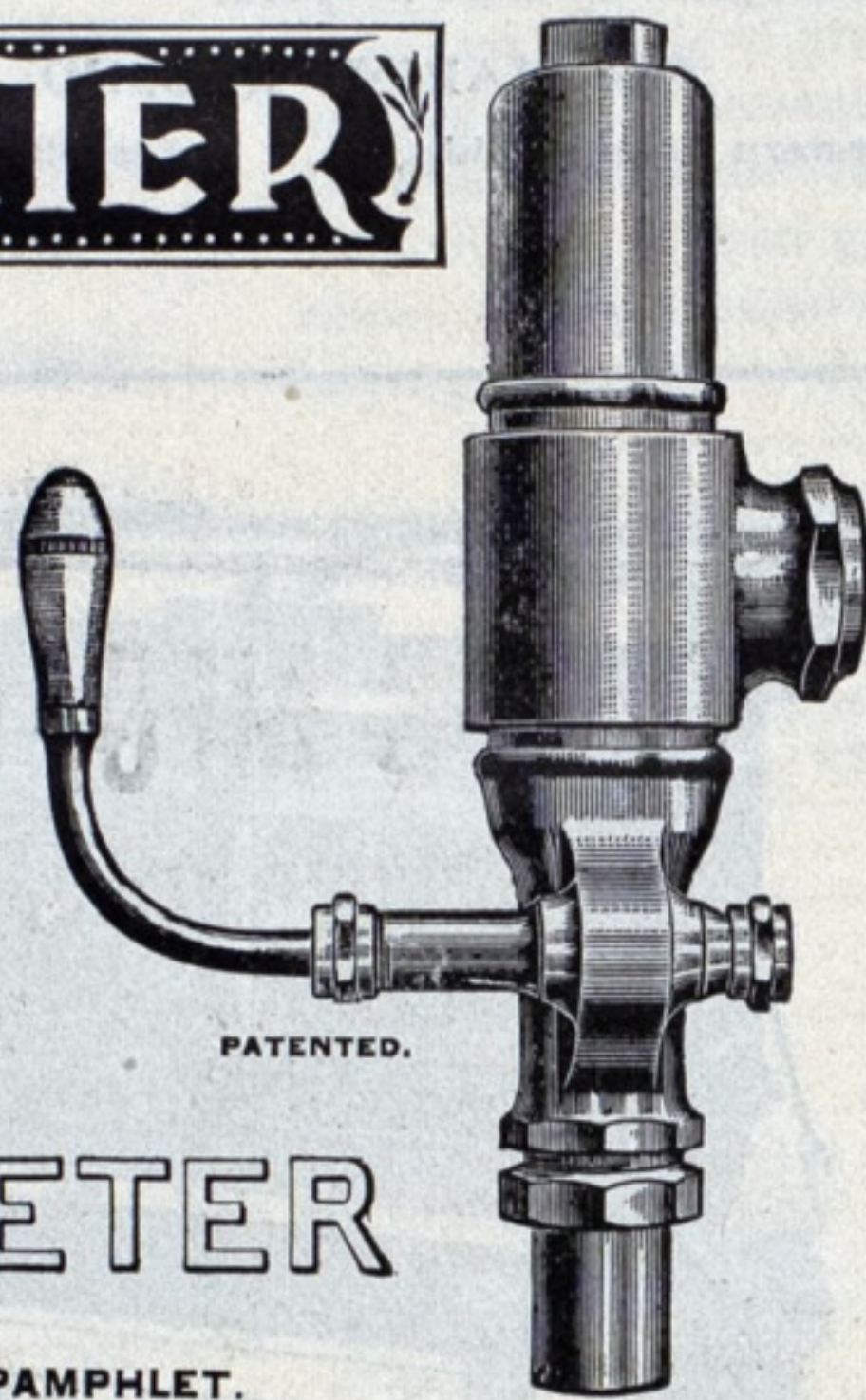
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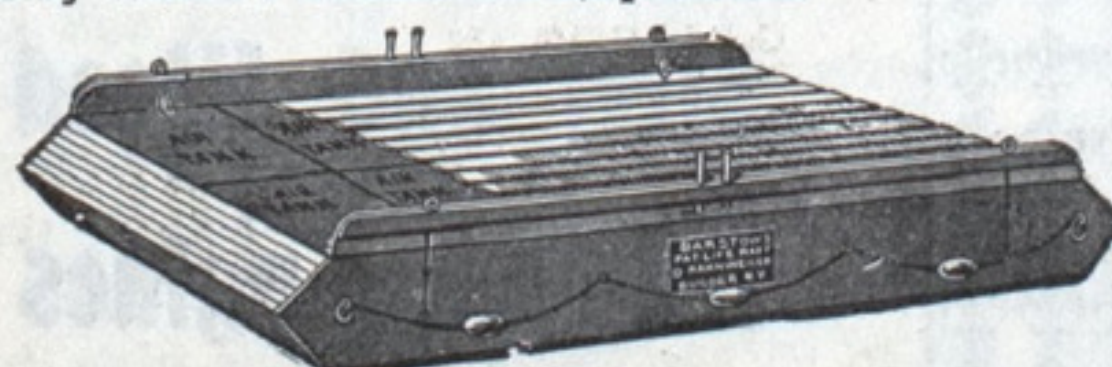
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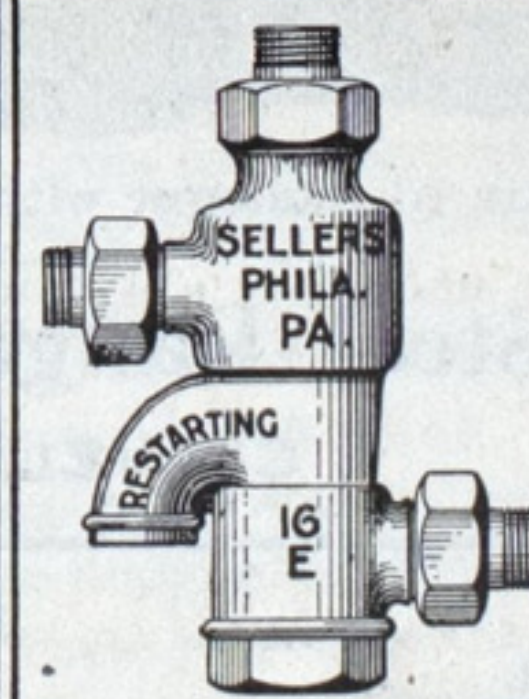
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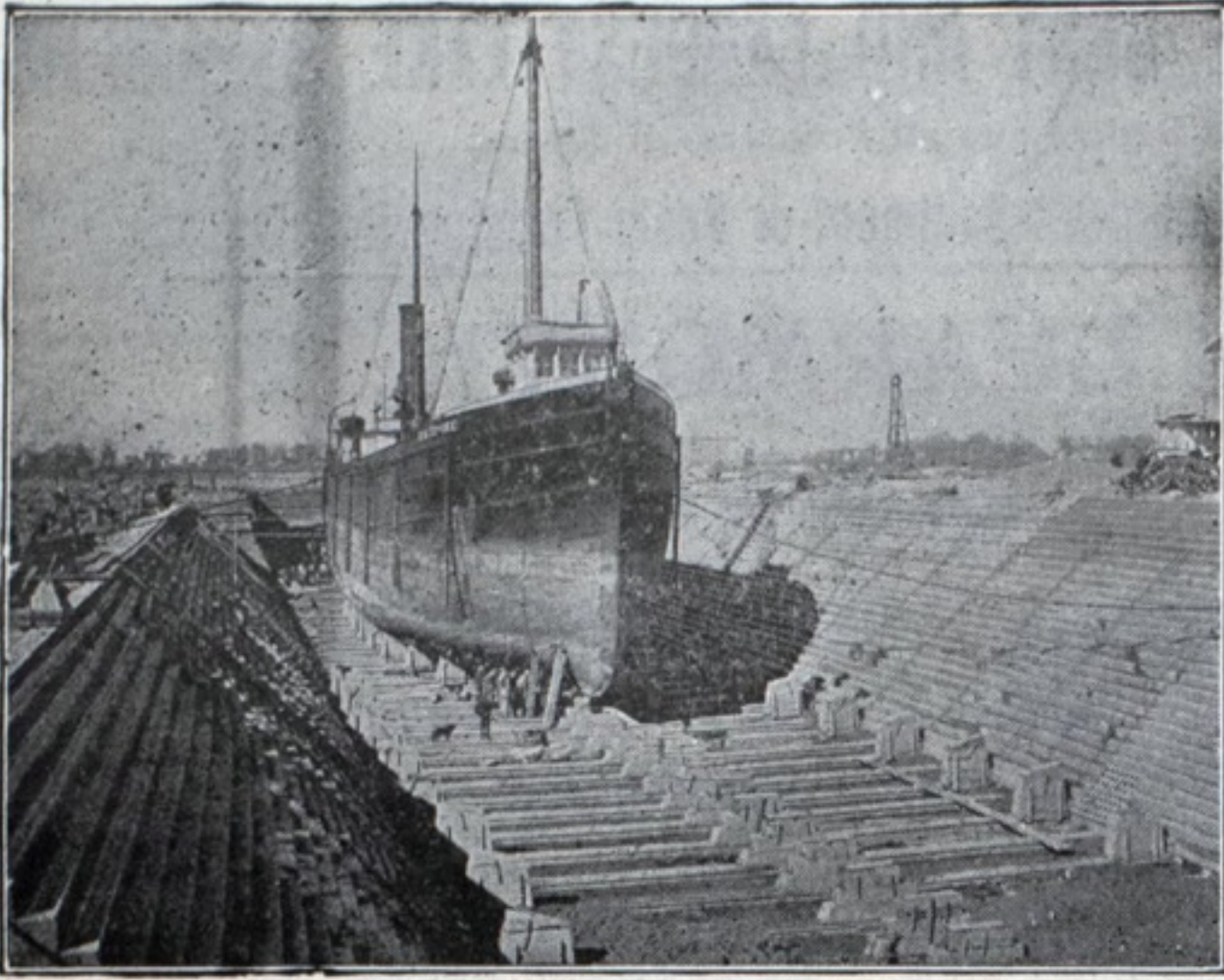
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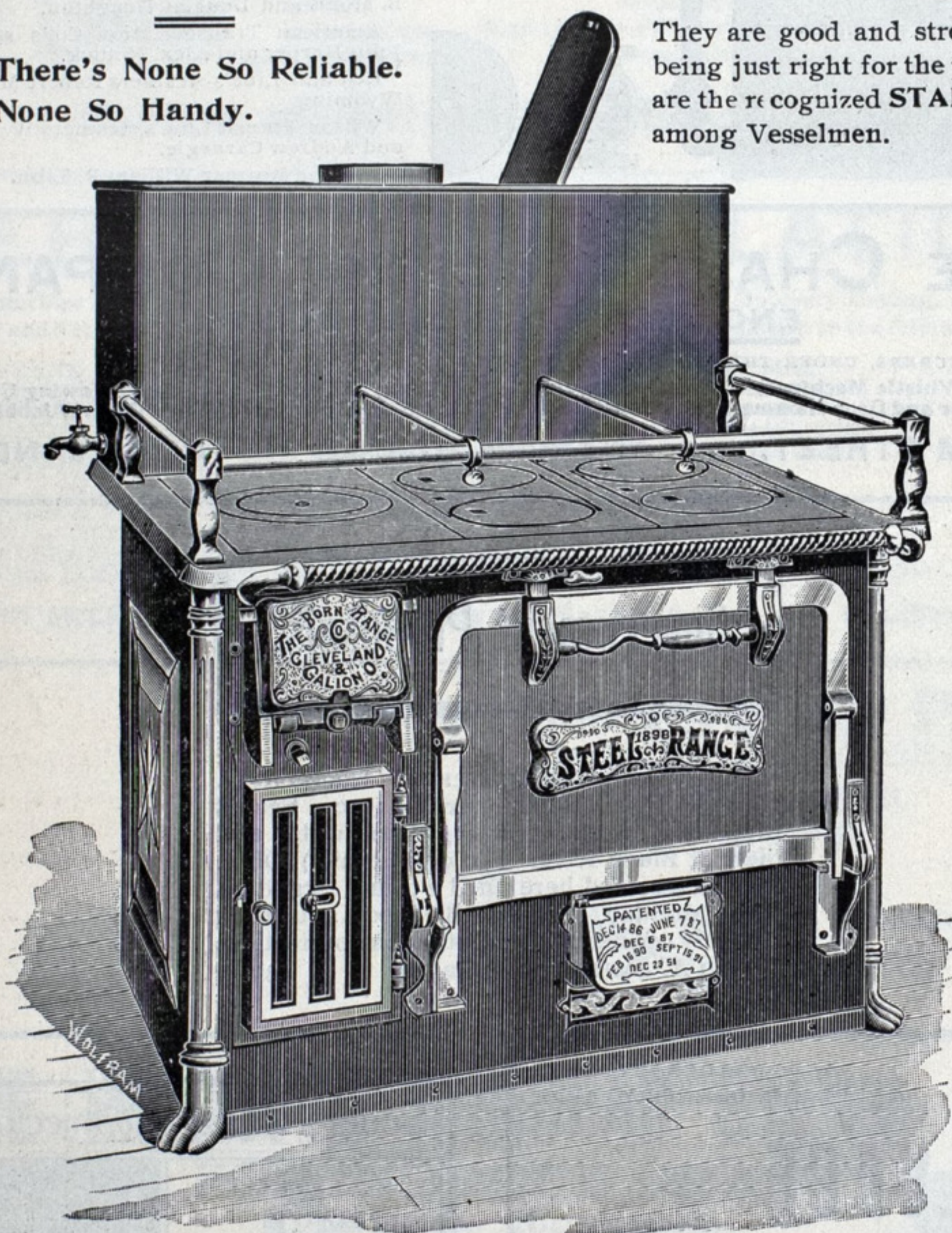
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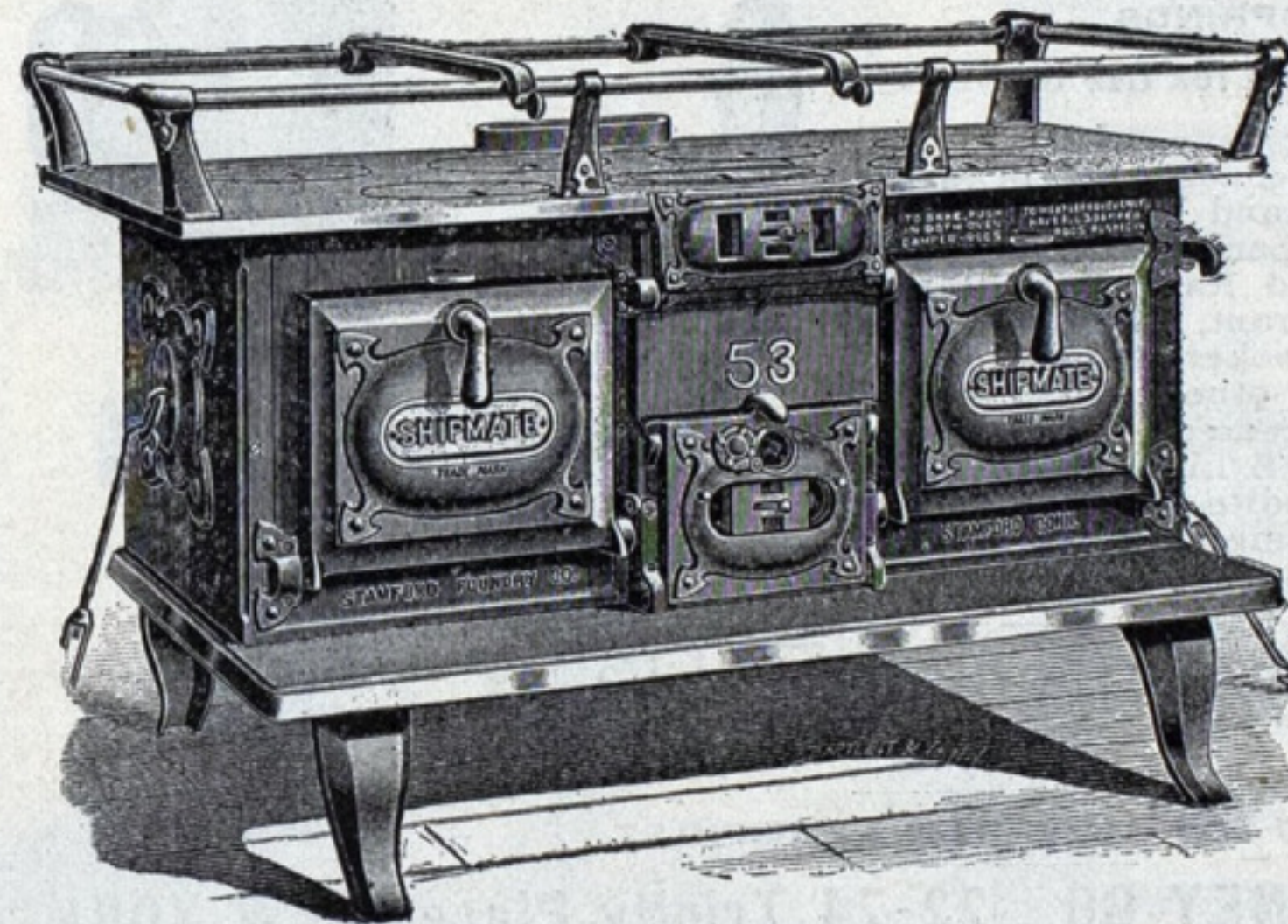
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